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TABULATED ANALYSES OF REPRESENTATIVE CRUDE PETROLEUMS OF THE UNITED STATES

BY

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INTRODUCTION

Crude petroleum is a very complex substance. An analytical statement of its properties must therefore consist of two distinct parts: First, the report of the results of the determinations made by the analyst in the laboratory, and, second, the proper arrangement, classification, and interpretation of these results so that the analysis, as a whole, will indicate the meaning and the relative importance of the essential characteristics of the oil.

This type of analytical statement is useful in judging many raw materials and manufactured products. To say, for example, that a lubricating oil has a Saybolt Universal viscosity of 300 seconds at 100° F. means little in itself. It is only when other characteristics of the oil are studied in conjunction with the viscosity that a true picture of the oil in question can be obtained. To the experienced refiner of lubricating oils a statement giving simply the viscosity, gravity, color, and the flash and pour points of the oil will often be sufficient, as he can supply from previous experience his own interpretation of the data furnished by the analyst. To the layman, however, the analyst's figures would be unintelligible.

On account of their great complexity, organic materials such as crude petroleum require especially careful interpretation if the laboratory results are not to be actually misleading. For example, the percentage of "gasoline" in various crude oils is stated in many of the standard textbooks on petroleum. Unless one knows, however, just what each particular author means by the term "gasoline" it is impossible to predict the yield of motor fuel from these published analyses.

In its study of the typical crude oils of the United States, the Bureau of Mines therefore had (1) to develop laboratory methods, (2) to collect and analyze several hundred samples of oil, and (3) to work out systems of classification and comparison, so that the laboratory results would be more generally useful.

HEMPEL DISTILLATION—BUREAU OF MINES MODIFICATION

The method of analysis adopted by the Bureau of Mines for its surveys of typical crude petroleum, including the modified Hempel-type apparatus and accessories used, is described by Dean,[1] Hill, Smith, and Jacobs. In brief, the method involves the distillation of a sample of crude oil under carefully controlled conditions that can be duplicated readily and the subsequent examination of the series of successive fractions thus obtained. In addition, the gravity, color, viscosity, pour point, and the sulphur content of the crude itself are determined.

TYPICAL ANALYSES

Table 1 of the present report gives analyses of 319 samples of crude oil. The data tabulated under the headings "Characteristics of crude," "Distillation at atmospheric pressure," and "Distillation at reduced pressure" were obtained directly by laboratory observation. The figures given in the "Summary" were mainly derived by calculation and interpretation.

METHODS OF CLASSIFICATION AND COMPARISON

The classification and comparison of crude oils are worthy of an extensive report, which can be published only after thorough study of all available data is completed. In this publication, consequently, it is impossible to more than outline the methods used.

SCOPE OF REPORT

The present bulletin therefore can be considered as one of a series which, taken as a whole, will present a comprehensive picture of the characteristics of crude petroleum. Its main purpose is to present the analyses of more than 300 typical crude oils, all produced within the United States.

ACKNOWLEDGMENTS

In presenting this material the authors wish to express their indebtedness to their predecessors and colleagues in the Bureau of Mines. The work of which this bulletin is a part was initiated and developed largely through the efforts of E. W. Dean, formerly petroleum chemist of the bureau. Many of the analyses reported were made under Doctor Dean's personal supervision, and he is largely responsible for the successful development of many of the analytical methods used and for the coordination of the work as a whole.

The work was started in the early months of 1919 under the general supervision of J. O. Lewis, at that time chief petroleum technologist of the bureau, and was continued under his successors, A. W. Ambrose, F. B. Tough, and H. H. Hill.

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[1] Dean, E. W., Hill, H. H., Smith, N. A. C., Jacobs, W. A., The Analytical Distillation of Petroleum: Bull. 207, Bureau of Mines, 1922, 82 pp. (pl. 3, fig. 33). This bulletin can be obtained only from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. The price of this publication is 15 cents.

The samples were collected by many members of the bureau and by others whose names are given in the general table of sampling data. The individual analysts of the samples are also mentioned in the general table of analyses. To all of these individuals the authors express their thanks.

Particular acknowledgment is due the many members of the petroleum industry who have assisted in procuring and collecting samples of crude petroleum; without their cooperation it would have been impossible to obtain many of the samples whose analyses are presented here.

Many of the analytical methods have been adopted from the publications of the American Society for Testing Materials, either directly or through the work of the technical committee on lubricants and liquid fuels of the Federal Specifications Board.

The cooperation of the State of Oklahoma in providing funds which assisted in the successful performance of the work is also gratefully acknowledged.

Many of the analyses in Table 1 have been published in mimeographed reports of investigations [2] dealing with different oil-producing districts.

METHODS OF OBTAINING CRUDE-OIL SAMPLES

Obtaining true samples of crude petroleum is, in general, a fairly simple process, especially from flowing or pumping wells. It should be remembered, however, that many wells produce mixtures of oil, water, and gas which often contain sediment and emulsified oil (B. S.). It is not advisable, therefore, to try to get a single true sample of the entire production of the well; that is, of the mixture containing gas, water, etc. If a complete picture of a well's production is required, the production of gas, water, oil, and B. S. should be measured separately and true samples of each product taken for analysis.

The following instructions have been prepared to guide representatives of the Bureau of Mines and others in collecting samples of crude oil.

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[2] Dean, E. W., Properties of Typical Crude Oils from the Eastern Producing Fields of the United States: Repts. of Investigations, Serial 2202, Bureau of Mines, January, 1921. Dean, E. W., Cooke, M. B., and Bauer, A. D., Properties of Typical Crude Oils from the Producing Fields of the Rocky Mountain District: Repts. of Investigations, Serial 2235, Bureau of Mines, March, 1921; Properties of Typical Crude Oils from the Producing Fields of Kansas: Repts. of Investigations, Serial 2322, Bureau of Mines, February, 1922. Dean, E. W., Bauer, A. D., and Lerch, W. B., Viscosities and Pour Tests of Typical Crude Oils from the Eastern and Rocky Mountain Producing Fields of the United States: Repts. of Investigations, Serial 2290, Bureau of Mines, October, 1921. Dean, E. W., Cooke, M. B., and Bopp, C. R., Properties of Typical Crude Oils from the Producing Fields of Northern Texas, Northern Louisiana, and Arkansas: Repts. of Investigations, Serial 2293, Bureau of Mines, November, 1921. Dean, E. W., Bauer, A. D., Cooke, M. B., and Bopp, C. R., Properties of Typical Crude Oils from the Producing Fields of Oklahoma: Repts. of Investigations, Serial 2364, Bureau of Mines, June, 1922. Smith, N. A. C., Cooke, M. B., and Bauer, A. D., Properties of Typical Crude Oils from the Producing Fields of Southern Louisiana and Southern Texas: Repts. of Investigations, Serial 2416, Bureau of Mines, November, 1922. Kraemer, A. J., and Smith, H. M., Properties of Typical Crude Oils from the Producing Fields of California: Repts. of Investigations, Serial 2595, Bureau of Mines, April, 1924, and Serial 2608, May, 1924.

INSTRUCTIONS FOR COLLECTING CRUDE-PETROLEUM SAMPLES

Fill the sample container directly from a lead line, if possible; otherwise, samples can be collected from storage tanks or gas traps, but, if they are, care must be taken to exclude water and sediment that may have settled out. Sometimes it may be necessary to take samples from a sump hole, but this should be avoided wherever possible, as oil that is exposed to the air loses its more volatile constituents very rapidly. Always state just how the sample is taken, as this has an important bearing on the interpretation of the analytical results.

Collect samples in clean tin cans, with tops that can be soldered after the cans are filled. If cans of this type are not available, a can with a cork stopper may be used if the stopper is thoroughly coated with shellac and forced tightly into the can. Apply an additional coating of shellac over the stopper. Before the shellac is applied the surface of the can must be thoroughly free from oil. Leave an air space of from one-fourth to one-half inch at the top of the can to allow for expansion.

Samples must be at least 1 quart in size. Gallon samples are preferable wherever possible. Mark the cans plainly. Shellac colored with lampblack is preferable as a marking ink for cans. This black shellac sticks very well to tin and is not affected by oil or gasoline. Take care to see that the cans do not leak and that they are packed securely to avoid damage in transit.

The following data sheet has been found useful in recording sampling data:

Sampling-data sheet

Field ------------------------ Marks on sample container ---------------
Operator ------------------ Farm or lease ---------- Well -----------
Section -------- Township -------- Range -------- Meridian ---------
County -------------------------------- State -----------------------
Operator's address --
Samples taken by ----------------------- Date taken -----------------
Name of sand or zone from which oil is produced ------------, -----------
(Local) (Geologic)
Formation: Sand ------------- Lime ---------------- Shale ---------
Depth to top of sand ------ Depth well drilled ------ Present depth ------
Depths (if known) where water encountered -------------------- ---------
Date of completion of well --

Initial production	Barrels oil --------------- Barrels water------------- Gas volume--------------- Rock pressure------------	Present production	Barrels oil----------- Barrels water--------- Gas volume---------- Rock pressure---------

Method of production (flowing, pumping, air, etc.)------------------------
Pump depth ---
Place where sample was obtained (sump hole, lead line, flow tank, bailer, etc.)

In the present bulletin only the more essential sampling data are included.

METHODS OF ANALYSIS

Many samples of crude oil contain small amounts of water when received in the laboratory. This water is measured and reported on the original analysis sheets by the analyst, should it be of interest to the individual submitting the sample. The water-free sample is given a preliminary examination and then submitted to distillation at atmospheric and reduced pressures. The various fractions obtained by distillation are examined and the results of the analysis reported in detail. The probable percentages of several products are calculated, and a summary statement indicating the refining properties of the crude oil is prepared.

Many of the methods of examination and of analysis are described by Dean.[3] Others are given in the methods for testing adopted by the Federal Specifications Board for use with Standard Specification 2d.[4]

The methods used in the examination of the samples of petroleum reported in this bulletin are stated in the footnotes of Table 1. For details of the development and further application of these methods, the reader is respectfully referred to the original work of Dean [5] and to the various publications of the American Society for Testing Materials.[6] Equivalent specific gravities and degrees A. P. I. are given in Table 2.

INTERPRETATION OF RESULTS

CHARACTERISTICS OF CRUDE

That the "gravity" of a crude oil is a fair measure of its character is often assumed. The assumption is true to a limited extent; for example, in many of the producing districts of this country "gravity" is descriptive enough to be used as a basis for crude-oil prices. However, the gravity of a naphthene-base crude is much heavier than that of an intermediate or paraffin base crude of the same general quality, hence gravity taken alone can not establish the identity of a crude oil.

The physical appearance of a crude is indicated, in the analysis, not only by the gravity, but by the color, the pour point, and the viscosity. The color of a crude oil may range from very light yellow to brownish black. For oils that are transparent when viewed in a 4-ounce bottle by transmitted light the bureau uses the National Petroleum Association color scale. Most oils, however, are opaque when viewed thus, and the color by reflected light is reported according to the following system: If the oil is clear in color it is reported as "green," "dark green," or "greenish black"; if it looks brownish or muddy, it is reported as "brownish green" or "brownish black."

The pour point of a crude indicates to some extent how the crude will behave in transportation and storage. Oils with pour points higher than 50° F. are likely to cause difficulty by solidifying during the winter in storage tanks and pipe lines. The viscosity of an oil

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[3] See footnote 1, p. 2.

[4] United States Government Master Specification for Lubricants and Liquid Fuels and Methods for Sampling and Testing: Tech. Paper 323B, Bureau of Mines, 1927, p. 93, fig. 27.

[5] See footnote 1, p. 2.

[6] American Society for Testing Materials, Philadelphia, Proceedings, 1918–1927; also A. S. T. M. Standards, 1918, 1921, 1924, and 1927.

also indicates its general character, as oils that are deficient in light fractions or contain large amounts of asphalt in solution have high viscosities.

Knowledge of the sulphur content of a crude oil is very important in discussing chemical relationships and refining value, but the base of the crude must also be considered in this connection. For instance, in a naphthene-base crude a content of 0.3 per cent of sulphur would not be considered unduly high, whereas the same percentage in a paraffin-base crude would make it a "high-sulphur" crude. The amount of sulphur present in a crude oil is apparently somewhat related to the amount of asphalt in solution, oils containing the greatest amount of asphalt usually having the highest sulphur content.

REFINING VALUE OF CRUDE

The modified Hempel distillation method employed by the Bureau of Mines for analyzing crude petroleum was not developed with the idea of obtaining figures that parallel the results of actual refinery operations. Refinery practice has not been and probably can not be standardized. The chief value of the method lies in the fact that it not only permits an adequate comparison of different crude oils but also furnishes the basis for a "rough and ready" interpretation in terms of commercial products. This "summary" is calculated in a somewhat arbitrary manner by means of the following rules:

RULES FOR CALCULATING SUMMARY

1. The (sum) total percentage of all fractions distilling at atmospheric pressure below 100° C. (212° F.) is reported as the percentage of light gasoline. This figure approximates the yield of gasoline with a maximum boiling point of 125° C. (257° F.).

2. The (sum) total percentage of all fractions distilling at atmospheric pressure below 200° C. (392° F.) is reported as the total percentage of gasoline and naphtha if no fraction in this range has a gravity heavier than 0.825 (40° A. P. I.). This figure approximates the yield of gasoline or naphtha with a maximum boiling point of 215° C. (419° F.). (If fractions boiling below 200° C. have gravities heavier than 0.825, they are classed as gas oil.)

3. The (sum) total percentage of all fractions distilling at atmospheric pressure above 200° C. (392° F.) but below 275° C. (527° F.) that have gravities of 0.825 (40° A. P. I.) or lighter is reported as kerosene distillate.

4. The (sum) total percentage of all fractions distilling at atmospheric pressure below 275° C. (527° F.) that have gravities heavier than 0.825 (40° A. P. I.) plus all vacuum distillate with a viscosity less than 50 seconds (Saybolt Universal at 100° F.) is reported as gas oil.

5. Lubricating distillates are classified as follows: Distillate with a viscosity range (Saybolt Universal at 100° F.) between 50 and 100 seconds is reported as nonviscous lubricating distillate. Distillate with viscosity between 100 and 200 seconds is reported as medium lubricating distillate. Distillate with viscosity above 200 seconds is reported as viscous lubricating distillate. The percentages of the lubricating distillates are calculated by plotting the gravities and viscosities of the individual fractions separately against "volume sum percentages" and noting where the 50-second, 100-second, and 200-second points on the viscosity curve intercept the "volume sum percentage" coordinate. The gravities corresponding to these intercepts give the gravity ranges of the distillates.

DISCUSSION OF SUMMARY

Gasoline, light ends.—It is evident that the terms "gasoline, light ends," "total gasoline and naphtha," etc., used in the summary are arbitrary, but their meanings are fairly precise. Comparison of Hempel analyses with large-scale distillations indicates that "light gasoline" represents material with a maximum boiling point of 125° C. (257° F.). The 20 per cent point of the present specification [7] for United States Government motor gasoline is 105° C. (221° F.). If this first 20 per cent of the typical gasoline were to be distilled off by the customary laboratory method and redistilled in an Engler flask, it would be found to have a maximum boiling point very close to 125° C. In other words, the percentage of "light gasoline" as given in the Hempel analysis indicates fairly well the suitability of the crude for making motor gasoline without blending.

Total, gasoline and naphtha.—The percentage given as "total, gasoline and naphtha" can be shown to correspond to the amount of material with a maximum boiling point of about 215° C. (419° F.). Although the Federal specification [7] for motor gasoline allows for a maximum boiling point of 225° C. (437° F.), it is probable that a large part of the gasoline marketed actually has a maximum boiling point of 210 to 220° C. (410 to 428° F.). Consequently the percentage of "gasoline and naphtha" reported in the Hempel analysis corresponds fairly closely to the percentage of gasoline that could be made from the crude by straight-run distillation.

Other distillates, kerosene, gas oil, and lubricating oils.—The percentage of kerosene distillate is believed to be fairly in accord with the average refinery yield. It is, however, possible to increase the yield of kerosene greatly or to diminish the yield by careful fractionation if market conditions indicate this to be desirable. The yields

[7] United States Government Master Specification for Lubricants and Liquid Fuels and Methods for Sampling and Testing: Tech. Paper 323B, Bureau of Mines, 1927, p. 3.

70562°—28——2

of gas oil and of nonviscous lubricating distillate are also believed to be equivalent to the average refinery yields. The yields of medium and viscous lubricating distillates, however, are less certain. A great deal depends on the presence or absence of waxes of different types, on the kind of refinery equipment available, and particularly upon the refiner's skill in the manufacture of lubricating oil.

Total distillate, residuum, and carbon residue.—The reader should note that a few additional figures are included in the summary. "Total distillate" is self-explanatory. After the distillation of a crude is completed a certain amount of "residuum" is left in the distillation flask. The "carbon residue" or "fixed carbon" in this residuum is of interest, as it indicates roughly the presence or absence of asphalt. Oils with high-carbon residues are usually considered less desirable for refining. The reader should also note that high-sulphur crudes usually have high-carbon residues.

"Carbon residue of the crude" is calculated by multiplying the "carbon residue of residuum" reported by the analyst by the percentage of residuum and dividing by 100. Most crudes contain so much volatile matter that it would be almost impossible to make this determination directly on the crude. Consequently, a calculated figure is included in the approximate summary. The writers and their associates have done a small amount of experimental work on the asphaltic material in crude oil and believe that the carbon residue of the crude as reported in the summary is roughly proportional to the percentage of asphalt dissolved in the crude. To obtain the approximate percentage of asphalt multiply the carbon residue of the crude by 2.5.

"BASE" OF A CRUDE OIL

In describing a crude oil reference is often made to its supposed "base." The writers have talked with many oil producers and refiners and have come to the conclusion that the word "base" is used much as it is in pharmaceutical work. For example, the "base" or "basis" of an ointment or salve is the fatty material (lard, petrolatum, or lanolin) used as a vehicle or carrier for the active medicinal principles. Apparently many of the pioneers in the petroleum industry considered crude oil similar in nature to these medicinal products, in that it consisted of a semisolid nonvolatile "base" and a volatile portion that could be distilled off to make gasoline, kerosene, and other products. Many crude oils when chilled slowly deposit a waxy material ("paraffin"), and this fact may have been one reason why such oils were spoken of as having a "paraffin base." Almost all of the oils first discovered in this country happened to be of this kind, and it was only when the oil industry developed in California and along the Gulf coast that oils were found which contained no wax but apparently did contain asphaltic material. These oils were accordingly known as "asphalt-base" oils. The use of this term, however, seems unfortunate, as better-grade crudes of this type contain little if any asphalt. This fact has apparently been recognized in the petroleum industry, and the more descriptive term "naphthene base" is frequently used in place of the term "asphalt base."

Oils that can not be assigned to either the "paraffin" or "naphthene" groups are usually classed as "intermediate-base" crudes. These "intermediate-base" oils in general resemble "paraffin-base" crudes much more than they do "naphthene-base" crudes. However, the writers believe that there is a fourth type that resembles a true naphthene-base crude, except that it contains a small amount of waxy material. To distinguish this type of oil from an intermediate-base oil it has been called "hybrid-base" crude.

DETERMINING THE BASE OF A CRUDE OIL

Many methods may be used to determine the "base" of a crude oil from the analytical data. For example, a "gravity" curve can be prepared from the analysis and compared with a set of typical curves. A simpler method is the following:

1. Note the A. P. I. gravity of "key fraction No. 1," that is, the fraction distilling between 250° and 275° C. (482° and 527° F.) at atmospheric pressure. If this gravity is 40° A. P. I. or lighter, the oil can be considered definitely to have a paraffin base. If this gravity is 33° A. P. I. or heavier, the oil has either a naphthene or a hybrid base. If it is between 33 and 40, the oil has an intermediate base.
2. Note the "cloud point" of "key fraction No. 2," that is, the fraction distilling between 275° and 300° C. (527° and 572° F.) at 40 mm. absolute pressure. If this cloud point is reported as being below 5° F., it indicates that wax is absent and that the oil has a naphthene base. If, however, the cloud point is above 5° F., it indicates the presence of wax and that the oil may have a paraffin, an intermediate, or a hybrid base.

The Bureau of Mines has examined several hundred crude-oil samples which represent petroleums from almost all of the important producing fields in the world and of virtually every geologic age. The method of classifying crudes given above has been successful in nearly every instance. It has been found, for example, that if key fraction No. 1 shows the crude to be "paraffin" or "intermediate" in character, the other fractions all indicate the same to be true. The vacuum fractions invariably contain wax, and the gravity ranges are surprisingly uniform. In the same way, if the gravity of key fraction No. 1 is below 33, the oil is either naphthenic or hybrid; the absence or presence of wax in key fraction No. 2 decides which it is.

FREAK OILS

The majority of crude oils can easily be assigned to one or another of these four classes, but, as is well known, many oils are found which lack either the light or the heavy ends of a normal crude. The method of classification can, however, be applied to these oils if key fraction No. 1 is present. Oils that lack the nonvolatile fractions are found in many parts of the world, but the production is generally small. They may belong to any of the four classes. Another class of "freak" oils includes the asphaltic seepages and other heavy oils from which the lighter fractions have apparently evaporated into the atmosphere. These oils are hard to classify definitely, as key fraction No. 1 is usually missing. A study of the gravity and viscosity curves of the vacuum distillates and the presence or absence of wax can usually be relied upon to assign these crudes to the proper class.

Table 1.—*Analyses of crude petroleums*

Origin of samples

Sample No.	Field	County	Township	Range	Meridian [1]	Collector of sample	Date collected	Sand, zone, or formation	Depth (feet)
1	2	3	4	5	6	7	8	9	10
Alaska									
1	Katalla or Controller Bay [2]					Chilkat Oil Co.	June, 1923	Shale	
Arkansas									
2	El Dorado	Union				C. R. Bopp [3]	May, 1921	Woodbine	2,156
3	do	do	17 S	14 W	5 Pr	H. W. Bell [3]	July, 1922		
4	do		17 S	15 W	5 Pr	do.[3]	do		
5	Irma	Nevada	14 S	21 W	5 Pr	V. E. Cottingham	July, 1923	Nacatoch or Midway	1,140–1,184
6	Smackover (Norphlet area)	Union	16 S	15 W	5 Pr	R. B. Kelly [3]	June, 1923	Nacatoch	2,045–2,096
7	Smackover	Ouachita	15 S	16 W	5 Pr	do.[3]	do	do	1,940–2,020
8	do	Union	16 S	16 W	5 Pr	W. H. Johnston [3]	December, 1923	Third	2,630–2,636
9	do	do	16 S	16 W	5 Pr	do.[3]	January, 1924	Upper Third	2,585–2,620
10	Woodley	do	18 S	14 W	5 Pr	R. B. Kelly [3]	October, 1923		2,213–2,222
California									
11	Arroyo Grande [2]	San Luis Obispo	31 S	13 E	M. D.	F. D. Gore	November, 1922	Pismo formation	500–1,000
12	Bardsdale	Ventura	3 N	19 W	S. B.	E. C. Lane [3]	October, 1922		
13	Belridge [2]	Kern	28 S	21 E	M. D.	E. K. Parks [3]	September, 1922	Two Zones	
14	Brea	Los Angeles				A. R. Elliott [3]	November, 1919		
15	Buena Vista [2]	Kern	31 S	23 E	M. D.	E. K. Parks and W. W. Cutler.[3]	September, 1922	Lower	
16	do.[2]	do	31 S	23 E	M. D.	do.[3]	do	Upper	
17	Casmalia [2]	Santa Barbara				E. C. Lane [3]	October, 1922		1,200–1,800
18	Cat Canyon [2]	do				do	do		2,600–3,000
19	Coalinga Eastside	Fresno				A. R. Elliott [3]	October, 1919		
20	do	do				do.[3]	do		
21	do.[2]	do	20 S 19 S	15 E 15 E	M. D. M. D.	E. C. Lane [3]	September, 1922	Lower Miocene Vaqueros	2,700–3,000
22	do.[2]	do	19 S	15 E	M. D.	do.[3]	do	do	2,300–2,360

[1] Meridians: 5 pr., fifth principal meridian and base line; 6 pr., sixth principal meridian and base line; Ind., Indian principal meridian and base line; La., Louisiana meridian and base line; M. D., Mount Diablo meridian and base line; Mont., Montana meridian and base line; S. B., San Bernardino meridian and base line; W. R., Wind River meridian and base line.
[2] Composite sample from several wells.
[3] Representative from Bureau of Mines.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Field	County	Township	Range	Meridian	Collector of sample	Date collected	Sand, zone, or formation	Depth (feet)
1	2	3	4	5	6	7	8	9	10
California—Con.									
23	Coalinga, Oil City [2]	Fresno	19 S.	15 E.	M. D.	E. C. Lane [3]	September, 1922	Upper Cretaceous (Chico) Purple Shale.	535
24	Coalinga Westside [2]	do	20 S. 20 S. 19 S.	14 E. 15 E. 15 E.	M. D. M. D. M. D.	do.[3]	do	Lower Miocene	
25	Conejo [2]	Ventura	1 N.	20 W.	S. B.	H. B. Thomson	October, 1922	Igneous rock	50–200
26	Coyote Hills [2]	Los Angeles and Orange.	3 S.	10 W.	S. B.	E. C. Lane [3]	do		3,200–4,000
27	Dominguez	Los Angeles	3 S.	13 W.	S. B.	H. C. Miller [3]	May, 1924	First and only	3,750–4,365
28	East Elk Hills	Kern	30 S.	24 E.	M. D.	E. K. Parks [3]	September, 1922	Upper	
29	do.[2]	do	31 S.	24 E.	M. D.	do.[3]	do	Lower	
30	do.[2]	do	30 S.	24 E.	M. D.	do.[3]	do	do	
	Fellows (see samples 55 and 56).								
31	Half Moon Bay	San Mateo				C. P. Bowie [3]	March, 1924		750
32	Huntington Beach [2]	Orange				E. C. Lane [3]	October, 1922		1,500
33	Huntington Beach	do				do.[3]	August, 1923	Bolsa	2,400
34	do	do				do.[3]	do	Ashton	4,570
35	Kern River [2]	Kern	29 S.	28 E.	M. D.	W. W. Cutler [3]	September, 1922		
36	Long Beach	Los Angeles				Lew Suverkrop [3]	August, 1923		5,017
37	do	do				do	do	Top	4,238
38	do	do				E. C. Lane [3]	do		4,769
39	Los Gatos	Santa Clara				C. P. Bowie [3]	March, 1924		720
40	Lost Hills [2]	Kern	26 S.	20 E.	M. D.	W. W. Cutler and E. K. Parks.[3]	September, 1922	Upper	
41	do.[2]	do	26 S.	21 E.	M. D.	do	do	Lower	
42	Maricopa Flat	do	11 N.	23 W.	S. B.	E. K. Parks [3]	do	Kinsey	
43	do	do	11 N.	23 W.	S. B.	do.[3]	do	Wilhelm	
44	do	do	11 N.	23 W.	S. B.	do.[3]	do	Gusher	
45	do	do	11 N.	23 W.	S. B.	do.[3]	do	Top	
46	McKittrick Front [2]	do	29 S.	21 E.	M. D.	do.[3]	do		
47	McKittrick [2]	do	30 S.	22 E.	M. D.	do.[3]	do		
48	Midway [2]	do	32 S.	23 E.	M. D.	E. K. Parks and W. W. Cutler.[3]	do	A	
49	Montebello	Los Angeles				A. R. Elliott [3]	November, 1919	Shallow	
50	do	do				do.[3]	do	Deep	2,400
51	North Belridge	Kern	27 S.	20 E.	M. D.	E. K. Parks and W. W. Cutler.[3]	September, 1922	Upper	
52	do	do	27 S.	20 E.	M. D.	do.[3]	do	Lower	

53	North Midway Shale area.[2]	do	31 S	22 E	M.D	do.[3]	do	B	
54	do	do	31 S	22 E	M. D	do.[3]	do	Deep	
55	North Midway Fellows area.[2]	do	32 S	23 E	M. D	do.[3]	do	B	
56	do.[2]	do	32 S	23 E	M. D	do.[3]	do	A	
	Oil City (see sample 23).								
57	Ojai [2]	Ventura	4 N	22 W	S. B	E. C. Lane [3]	October, 1922		500–1, 800
58	Richfield	Orange				A. R. Elliott [3]	November, 1919		
59	Salt Lake [2]	Los Angeles				E. C. Lane [3]	October, 1922		900–2, 300
60	Santa Fe Springs	do				do.[3]	August, 1923	Meyer	4, 600
61	do	do				do.[3]	do	Bell	
62	Santa Maria [2]	Santa Barbara				do.[3]	October, 1922	Second	1, 500–3, 000
63	Santa Paula [2]	Ventura	4 N	21 W	S. B	H. B. Thomson	November 1922	Sandy shale of Fernando series.	500–1, 500
64	Sargent [2]	Santa Clara	11 S	4 E	M. D	E. C. Lane [3]	October 1922		800–1, 100
65	Simi [2]	Ventura	3 N	18 W	S. B	H. B. Thomson	November, 1922	Upper Eocene	500–1, 500
66	South Mountain [2]	do	3 N 3 N	20 W 21 W	S. B S. B	E. C. Lane [3]	October, 1922		
67	Summerland [2]	Santa Barbara				do.[3]	do		300–500
68	Torrance	Los Angeles				E. C. Lane [3]	October, 1922	Brown shale	
69	Ventura [2]	Ventura				do.[3]	October, 1919	Lower	3, 600–3, 850
70	do.[2]	do				do.[3]	October, 1922	Light oil	2, 700–2, 935
71	West Elk Hills	Kern	30 S	24 E	M. D	E. K. Parks [3]	September, 1922		
72	do	do	30 S	24 E	M. D	do.[3]	do		
73	Whittier [2]	Los Angeles	2 S	11 W	S. B	E. C. Lane [3]	October, 1922		900–3, 300
Colorado									
74	Florence [2]	Fremont and Pueblo.	19 S 20 S	69 W 69 W	6 Pr 6 Pr	A. D. Bauer [3]	August, 1920		
75	Hamilton Dome	Craig and Routt	5 N	91 W	6 Pr	B. H. Carnahan [3]	August, 1923	Shale	
76	Rangeley	Rio Blanco	2 N	102 W	6 Pr	do.[3]	do	do	
Illinois									
77	(2)	Crawford, Cumberland, Jasper, Lawrence.				W. A. Jacobs [3]	April, 1919		
Indiana									
78	Lima district [2]	Allen and others				J. P. Smoots [3]	do		
Kansas									
79	Altoona [2]	Wilson	29 S	16 E	6 Pr	A. D. Bauer [3]	August, 1920		
80	Augusta [2]	Butler	27 S 28 S 29 S	3 and 4 E 3 and 4 E 3 and 4 E	6 Pr 6 Pr 6 Pr	do.[3]	do		
81	Cattleman [2]	do	26 S	8 E	6 Pr	do.[3]	do		
82	Chanute	Neosho	27 S	18 E	6 Pr	do.[3]	September, 1920		

[2] Composite sample from several wells.

[3] Representative from Bureau of Mines.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Field	County	Township	Range	Meridian	Collector of sample	Date collected	Sand, zone, or formation	Depth (feet)
1	2	3	4	5	6	7	8	9	10
Kansas—Contd.									
83	Elbing [2]	Butler	23 S.	4 E.	6 Pr.	A. D. Bauer [3]	August, 1920		
84	Eldorado [2]	do.	25 S. 26 S.	4 and 5 E 4 and 5 E	6 Pr. 6 Pr.	do.[3]	do.	Eldorado	
85	Elrod	Cowley	32 S.	5 E.	6 Pr.	do.[3]	do.		
86	Elsmere and Moran [2]	Allen	24 S. 26 S.	20 and 21 E. 20 and 21 E.	6 Pr. 6 Pr.	do.[3]	September, 1920		
87	Erie	Neosho	28 S.	20 E.	6 Pr.	do.[3]	do.		
88	Florence and Peabody [2]	Marion	21 S. 22 S.	4 and 5 E. 4 and 5 E.	6 Pr. 6 Pr.	do.[3]	August, 1920	Three Sands	
89	Independence	Montgomery	33 S.	15 E.	6 Pr.	do.[3]	do.		
90	Iola [2]	Allen	24 S.	18 E.	6 Pr.	do.[3]	September, 1920		
	Moran (see sample 86).								
91	Neodesha [2]	Wilson	30 S.	15 and 16 E.	6 Pr.	do.[3]	August, 1920		
92	New Albany [2]	Elk	29 S.	13 E.	6 Pr.	do.[3]	do.		
93	Osawatomie [2]	Miami	18 S.	22 E.	6 Pr.	do.[3]	do.		
	Peabody (see sample 88).								
94	Peacock [2]	Cowley	32 S.	4 E.	6 Pr.	do.[3]	do.		1,450
95	Peru Sedan [2]	Chautauqua	34 S. 35 S.	11 and 12 E. 11 and 12 E.	6 Pr. 6 Pr.	do.[3]	do.	Peru	
96	do.[2]	do.	33 S.	11 E.	6 Pr.	do.[3]	do.	Mississippi lime	
97	Potwin [2]	Butler	24 S.	3 E.	6 Pr.	do.[3]	do.		
98	Rantoul [2]	Franklin	17 S.	21 E.	6 Pr.	do.[3]	do.		
99	Sallyards [2]	Butler and Greenwood.	25 S. 26 S.	8 E. 8 E.	6 Pr. 6 Pr.	do.[3]	do.	Hull	
	Sedan (see samples 95 and 96).								
100	Teeter [2]	Greenwood	23 S. 24 S.	8 and 9 E. 8 and 9 E.	6 Pr. 6 Pr.	do.[3]	do.		2,200
101	Tyro	Montgomery	35 S.	15 E.	6 Pr.	do.[3]	do.		
102	Urbana	Neosho	28 S.	19 E.	6 Pr.	do.[3]	September, 1920		
103	Wayside [2]	Montgomery	34 S.	14 E.	6 Pr.	do.[3]	August, 1920		
104	Yates Center [2]	do.	25 S.	15 E.	6 Pr.	do.[3]	September, 1920		

Kentucky									
105	Big Sinking pool [2]	Estill and Lee				C. R. Bopp [3]	April, 1919		
106	Campton pool [2]	Wolf				do.[3]	do.		
107	Cow Creek pool [2]	Estill				do.[3]	do.		
108		Lawrence				do.[3]	do.		
109	Olympia pool [2]	Bath				do.[3]	do.		
110	Ragland pool [2]	do.				do.[3]	do.		
111	Ross Creek pool [2]	Jackson and Lee				do.[3]	do.		
112	Somerset	Magoffin					November, 1921	Wier	1,037-1,123
113		Wayne				C. R. Bopp [3]	April, 1919		
Louisiana									
114	Anse La Butte	St. Martins				Humble Oil & Refining Co.	January, 1922		1,450
115	Bull, Bayou, De Soto, and Red River.[2]	DeSoto and Red River.				C. R. Bopp [3]	May, 1921	Woodbine	2,350-2,800
116	Caddo [2]	Caddo				do.[3]	do.	do.	900-2,300
117	do.	do.				do.[3]	do.		
118	Cotton Valley	Webster	21 N.	10 W.	La.	J. S. Ross [3]	April, 1924	Blossom	2,320-2,542
	De Soto (see sample 115).								
119	Edgerly [2]	Calcasieu				J. B. Kerr [3]	November, 1921		3,200
120	Elmgrove	Bossier				C. R. Bopp [3]	May, 1921	Blossom	1,550
121	Homer [2]	Claiborne				do.[3]	do.	Blossom and Nacatoch	1,100-2,100
122	Jennings	Acadia				J. B. Kerr [3]	November, 1921		1,845-2,200
123	Pine Island	Caddo				C. R. Bopp [3]	May, 1921		
	Red River (see sample 115).								
124	Vinton [2]	Calcasieu				J. B. Kerr [3]	November, 1921		1,800-2,000
Montana									
125	Cat Creek	Fergus						Top	
126	do.	do.						Second	
127	Kevin Sunburst	Toole	34 N.	2 W.	Mont.	H. H. Hill [3]	July, 1923		
128	do.	do.	35 N.	2 W.	do.	do.[3]	do.		
New Mexico									
129	Hogback	San Juan							
New York									
130	(2)	Allegany				J. P. Smoots [3]	February, 1919		
Ohio									
131	Corning [2]					W. A. Jacobs [3]	April, 1919		
132	Mecca [2]	Trumbull				W. P. Lumley & Co.	April, 1920		
133	North Lima [2]					J. P. Smoots [3]	April, 1919		
134	South Lima [2]					do.[3]	do.		
135	Penn grade crude [2]					W. A. Jacobs [3]	do.		

[2] Composite sample from several wells.

[3] Representative from Bureau of Mines.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Field	County	Township	Range	Meridian	Collector of sample	Date collected	Sand, zone, or formation	Depth (feet)
1	2	3	4	5	6	7	8	9	10
Oklahoma									
136	Allen [2]	Pontotoc					January, 1922		
137	Alluwe and Bluff [2]	Nowata	25 N	16 and 17 E.	Ind	A. D. Bauer [3]	September, 1920		
138	Arbuckle [2]	Marshall	7S	5 E	Ind	C. R. Bopp [3]	November, 1920	Arbuckle	450
139	Bald Hill	Okmulgee				do.[3]	October, 1921		
140	Bartlesville [2]	Washington					January, 1922		
141	do.[2]	do				M. B. Cooke [3]	May, 1923		
142	Beggs	Okmulgee				C. R. Bopp [3]	October, 1921		
143	Bigheart [2]	Osage	24 N	10 E	Ind	A. D. Bauer [3]	September, 1920	Bartlesville and Cleveland	
144	Billings [2]	Noble	25 N 26 N	3 W 3 W	Ind Ind	do.[3]	August, 1920		
145	Blackwell [2]	Kay	27 N 28 N	1 W 1 W	Ind Ind	do.[3]	September, 1920		
	Bluff (see sample 137).								
146	Boynton	Muskogee				C. R. Bopp [3]	October, 1921		
147	Bristow [2]	Creek				do.[3]	do		
148	Broken Arrow [2]	Tulsa and Wagoner.				do.[3]	do		
149	Buffalohead	Noble	24 N	3 E	Ind	R. M. Carr [3]	May, 1924	Wilcox	3,908–3,958
150	Burbank [2]	Osage	26 N 27 N	6 E 6 E	Ind Ind	Geo. Brewer [3]	January, 1922		
151	Canary [2]	Washington	29 N	14 E	Ind	A. D. Bauer [3]	September, 1920		
152	Cement	Caddo	5 N	9 W	Ind	C. R. Bopp [3]	November, 1920		
153	Chickasha	Grady	4 N	8 W	Ind	H. R. Pierce [3]	April, 1923	Nichlos	
154	Claremore [2]	Rogers				C. R. Bopp [3]	October, 1921	Cleveland, Bartlesville, Layton, and Tulsa.	
155	Cleveland	Pawnee	21 N	7 and 8 E	Ind	A. D. Bauer [3]	September, 1920		
156	Comanche	Stephens	2 S	7 W	Ind	C. R. Bopp [3]	November, 1920		
157	Cromwell	Seminole	10 N	8 E	Ind	C. O. Rison [3]	April, 1924	Wilcox	3,457–3,485
158	Cushing [2]	Creek	17 N 18 N	6 and 7 E 6 and 7 E	Ind Ind	A. D. Bauer [3]	September, 1920	Glen, Dutcher, Bartlesville, and Tucker.	
159	Deaner [2]	Okfuskee				C. R. Bopp [3]	October, 1921		
160	Delaware and Lenapah [2]	Nowata	27 N	14 and 15 E.	Ind	A. D. Bauer [3]	September, 1920		
161	Delaware extension [2]	do	27 N	16 E	Ind	do.[3]	do		
162	Duncan	Stephens	2 S	8 W	Ind	C. R. Bopp [3]	November, 1920		
163	Fox [2]	Carter	2 S	3 W	Ind	H. C. George [3]	February, 1924	Fox	2,267–2,298
164	Garber	Garfield					January, 1922		
165	Glen	Creek and Tulsa				C. R. Bopp [3]	October, 1921		

166	Graham [1]	Carter	2 S.	2 W.	Ind.	H. C. George [3]	February, 1924	Graham	3,054-3,102
167	do	do	2 S.	3 W.	Ind.	do.[3]	do	Johnson	3,040-3,064
168	do	do	3 S.	2 W.	Ind.	do.[3]	do	Patsy gas	1,000
169	Healdton	do	4 S.	3 W.	Ind.	C. R. Bopp [3]	November, 1920		
170	Henryetta	Okmulgee				do.[3]	October, 1921		
171	Hewitt	Carter	4 S.	2 W.	Ind.	do.[3]	November, 1920		
172	Hickman [1]	Osage	26 N. 27 N.	5 and 6 E 5 and 6 E	Ind. Ind.	Roxana Petroleum Corporation.	April, 1921	Hickman	2,900
173	Hogshooter and Ochelata	Washington					January, 1922		
174	Hominy [1]	Osage	22 N.	8 E.	Ind.	A. D. Bauer [3]	September, 1920	Layton, Bartlesville, and Mississippi lime.	
175	Jennings [1]	Pawnee	20 N. 21 N.	7 E. 7 E.	Ind. Ind.	do.[3]	do	Bartlesville	
176	Kellyville [2]	Creek				C. R. Bopp [3]	October, 1921		
	Lenapah (see sample 160).								
177	Lyons	Okfuskee				do.[3]	do		
178	Madill	Marshall	5 S.	5 E.	Ind.	do.[3]	November, 1920		1,700
179	Newkirk	Kay	27 N.	3 E.	Ind.	A. D. Bauer [3]			
180	Mounds	Creek				C. R. Bopp [3]	October, 1921		
181	Muskogee	Muskogee				do.[3]	do		
	Ochelata (see sample 173).								
182	Okmulgee [1]	Okmulgee				do.[3]	do	Boage	1,250
183	Osage	Osage	29 N.	11 E.	Ind.	do.[3]	May, 1922		
184	Owasso [2]	Tulsa				do.[3]	October, 1921		
185	Pershing [2]	Osage	25 N.	9 and 10 E.	Ind.	A. D. Bauer [3]	September, 1920		
186	Phillipsville	Okmulgee				C. R. Bopp [3]	October, 1921		
187	Ponca City [1]	Kay	25 N. 26 N.	2 E. 2 E.	Ind. Ind.	A. D. Bauer [3]	September, 1920		
188	Quay or Yale [1]	Payne	19 N.	6 E.	Ind.	do.[3]	do	Mississippi lime and Bartlesville.	
189	Sayre	Beckham	9 N.	23 W.	Ind.	C. I. Huss [3]	October, 1923		
190	Shamrock	Creek	16 N.	8 E.	Ind.		June, 1924		3,474-3,500
191	Skiatook, Sperry, and Tulsa.[2]	Tulsa				C. R. Bopp [3]	October, 1921		
192	Slick [2]	Creek				do.[3]	do		
	Sperry (see sample 191).								
193	Tonkawa	Noble					January, 1923	Upper Hoover	
194	do	do					do	Carmichael	
195	do	do	25 N.	1 W.	Ind.	R. M. Carr [3]	April, 1924	Slick	4,060-4,081
	Tulsa (see sample 191).								
196	Wagoner [2]	Wagoner				C. R. Bopp [3]	October, 1921		
197	Walters	Cotton	2 S.	10 W.	Ind.	do.[3]	November, 1920		
198	Watchorn	Pawnee	23 N.	3 E.	Ind.	R. M. Carr [3]	April, 1924	Wilcox	4,123
199	Wayside [2]	Washington				do.[3]	May, 1923	Wayside	525
200	Wild Cat Jim	Carter	2 S.	2 W.	Ind.	H. C. George [3]	February, 1924	Wild Cat Jim	2,595-2,640
	Yale (see sample 188).								
201	Youngstown [2]	Okmulgee				C. R. Bopp [3]	October, 1921		

[1] Composite sample from several wells.

[3] Representative from Bureau of Mines.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Field	County	Township	Range	Meridian	Collector of sample	Date collected	Sand, zone, or formation	Depth (feet)
1	2	3	4	5	6	7	8	9	10
Pennsylvania									
202	Plum Creek Church	Allegheny				M. E. Johnson	August, 1922		
203	(2)	Allegheny and Washington.				J. P. Smoots [3]	February, 1919		
204	(2)	Green				do.[3]	do	Gordon	
205	(2)					do.[3]	do		
206	(2)	McKean				do.[3]	do		
207	(2)	Venango				do.[3]	do	Third	
208	(2)	do				do.[3]	do	First and Second	
209	Franklin [2]					do.[3]	do		
Texas									
210	Amarillo	Carson				O. L. Price	July, 1923		3,070–3,076
211	Barbers Hill	Chambers				H. W. Bell [3]	August, 1922		3,606
212	Batson	Hardin				Humble Oil & Refining Co.	January, 1922		1,100
213	Blue Ridge	Fort Bend				do	do		1,672
214	do	do				do	do		3,947
215	Breckenridge	Stephens				C. R. Bopp [3]	April, 1921		3,100–3,250
216	Brownwood [2]	Brownwood				do.[3]	do		350–2,400
217	Burkburnett [2]	Wichita				do.[3]	do		1,650
218	Caddo	Stephens				do.[3]	do	Caddo lime	3,200
219	Currie	Navarro				P. S. Haury [3]	August, 1922	Woodbine	2,949–2,994
220	Curry [2]	Stephens						Bend series	3,209–3,258
221	Corsicana	Navarro				W. H. Johnston [3]	April, 1924		1,020–1,070
222	do	do				H. C. O. Clarke and R. B. Kelly.[3]	do		800
223	Damon Mound	Brazoria				Humble Oil & Refining Co.	January, 1922		3,212
224	do	do				do	do		1,700
225	Desdemona [2]	Comanche and Eastland.				C. R. Bopp [3]	April, 1921		2,200–2,300
226	Electra	Wichita						Cisco formation	1,460–1,465
227	do	do						Permian	479–484
228	Fowlkes Station	do						Permian or Cisco	1,596–1,604
229	Goose Creek	Harris				R. R. Matthews	October, 1921		2,000
230	do	do				do	do		2,800
231	do	do				do	do		3,500

232	do	do				Humble Oil & Refining Co.	January, 1922		4,350
233	Holiday [2]	Archer				C. R. Bopp [3]	April, 1921		1,630
234	Hull	Liberty				Humble Oil & Refining Co.	January, 1922		1,600
235	do	do				do	do		3,300
236	Humble	Harris				do	do		950
237	do	do				do	do		4,194
238	Ibex	Shackleford				P. S. Haury and R. B. Kelly.[3]	January, 1923		3,538-3,572
239	Ivan	Stephens						Bend	3,251-3,256
240	K. M. A.[2]	Wichita				C. R. Bopp [3]	April, 1921		1,740-1,760
241	do.[2]	do				do.[3]	do	New	1,500
242	Kosse	Limestone					October, 1922	Edwards	3,750
243	Markham	Matagorda				H. W. Bell [3]	August, 1922		2,700
244	Mexia [2]	Limestone				C. R. Bopp [3]	April, 1921	Woodbine	3,000-3,100
245	Mirando	Zapata					June, 1922		
246	Moran [2]	Shackleford				C. R. Bopp [3]	April, 1921		2,250-3,460
247	Nacogdoches	Nacogdoches					August, 1922		
248	North Dayton	Liberty				Humble Oil & Refining Co.	January, 1922		1,700
249	Oil City [2]	Young						Upper Pennsylvanian	1,860
250	Orange	Orange				W. W. Scott [3]	April, 1922		3,680-3,694
251	Panhandle	Hutchinson				George Williams	January, 1924		2,800-2,820
252	Petrolia [2]	Clay				C. R. Bopp [3]	April, 1921		600-1,900
253	Pierce Junction	Harris				Humble Oil & Refining Co.	January, 1922		3,850
254	Pierdes Pintos	Duvall					February, 1922		
255	Pioneer [2]	Eastland							2,577
256	Powell	Navarro				W. H. Johnston [3]	July, 1923	Woodbine	2,958-2,962
257	do	do				R. B. Kelly [3]	April, 1924	Nacatoch	1,489-1,530
258	Ranger [2]	Eastland				C. R. Bopp [3]	April, 1921		1,550-3,400
259	Richland	Navarro				P. S. Haury [3]	September, 1922	Woodbine	2,980
260	Richland Extension	do				W. H. Johnston [3]	April, 1924	do	2,965-2,968
261	Santa Anna [2]	Coleman				C. R. Bopp [3]	April, 1921		1,500
262	Saratoga	Hardin				Humble Oil & Refining Co.	January, 1922		1,000
263	Schott [2]	Webb				H. W. Bell and P. S. Haury.[3]	February, 1923		1,560-1,580
264	Somerset	Atascosa				J. B. Kerr [3]	November, 1921		1,600
265	do	do				do.[3]	do		1,450
266	Sour Lake	Hardin				Humble Oil & Refining Co.	January, 1922		2,400
267	South Bend	Young						Upper Pennsylvanian	1,921-1,925
268	do	do						do	2,500-2,526
269	South Electra	Wichita					April, 1922	Cisco	1,952-1,960
270	do.[2]	do						Permian to Cisco	
271	Spindle Top [2]	Jefferson				Humble Oil & Refining Co.	July, 1922		800

[2] Composite sample from several wells.

[3] Representative from Bureau of Mines.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Field	County	Township	Range	Meridian	Collector of sample	Date collected	Sand, zone, or formation	Depth (feet)
1	2	3	4	5	6	7	8	9	10
Texas—Contd.									
272	Strawn	Palo Pinto				C. R. Bopp [3]	April, 1921		1,600
273	Terry	Orange				Humble Oil & Refining Co.	January, 1922		3,321
274	Texhoma [2]	Wichita				C. R. Bopp [3]	April, 1921		1,200
275	do	Archer					April, 1922	Cisco	1,600-1,635
276	Thrall [2]	Williamson				C. R. Bopp [3]	do		
277	West Columbia	Brazoria					June, 1922		
278	do	do				E. P. Heath	January, 1923		3,418-3,446
279	Young	Young				C. R. Bopp [3]	April, 1921		
280	Yturri	Bexar					June, 1922		
Utah									
281	Mexican Hat	San Juan				W. A. Sawdon [3]	March, 1923		
West Virginia									
282	Blue Creek [2]					C. R. Bopp [3]	May, 1919		
283	Cabin Creek [2]	Kanawha				do.[3]	do		
284	Kelly Creek [2]	do				do.[3]	do		
Wyoming									
285	Big Muddy	Converse	33 N	76 W	6 Pr	H. H. Hill [3]	July, 1923	Shannon	
286	do	do	33 N	77 W	6 Pr	do.[3]	do	Muddy	
287	South Casper Creek	Natrona	33 N	83 W	6 Pr		May, 1923		
288	Circle Ridge	Fremont	6 N	3 E	W. R.	H. J. Lowe [3]	June, 1923	Embar	230
289	Dallas [2]	do	32 N	99 W	6 Pr	A. D. Bauer [3]	July, 1920	do	
290	Derby [2]	do	31 N 32 N	98 W 98 W	6 Pr 6 Pr	Archie Campbell	March, 1924	do	1,200
291	Elk Basin	Park	58 N	99 W	6 Pr	H. H. Hill [3]	July, 1923	Second	
292	do	do	58 N	99 W	6 Pr	do.[3]	do	First	
293	do	do	58 N	100 W	6 Pr	do.[3]	do	do	
294	Ferris [2]	Carbon				do.[3]	do		
295	Grass Creek [2]	Hot Springs	46 N	98 W	6 Pr	A. D. Bauer [3]	July, 1920	Frontier	
296	do.[2]	do	46 N	98 W	6 Pr	H. H. Hill [3]	July, 1923	Embar and Tensleep	
297	do.[2]	do	46 N	98 W	6 Pr	do.[3]	do		
298	Greybull [2]	Big Horn	52 N	93 W	6 Pr	A. D. Bauer [3]	July, 1920	Greybull	
299	Hamilton Dome [2]	Hot Springs	44 N	98 W	6 Pr	H. H. Hill [3]	July, 1923		

300	do	do	44 N	98 W	6 Pr	do.[3]	do	Stray	
301	Lance Creek	Niobrara	35 N	65 W	6 Pr	do.[3]	do		
302	do	do	36 N	65 W	6 Pr	do.[3]	do		
303	do	do	36 N	64 W	6 Pr	do.[3]	do		3, 965–3, 980
304	Lander [2]	Fremont	2 S	1 and 2 E.	W. R	A. D. Bauer [3]	July, 1920	Embar	
305	Lost Soldier [2]	Carbon				H. H. Hill [3]	May, 1923	Wall Creek	
306	Maverick Springs	Fremont	6 N	2 W	W. R	A. D. Bauer [3]	July, 1920	Embar	
307	Mule Creek [2]	Niobrara	39 N	60 W	6 Pr	do.[3]	do	Dakota	
308	New Castle [2]	Weston	46 N	63 W	6 Pr	do.[3]	do	Second	
309	Osage [2]	do	46 N	63 W	6 Pr	H. H. Hill [3]	July, 1923		
310	Pilot Butte [2]	Fremont	3 N	1 W	W. R	A. D. Bauer [3]	July, 1920		
311	Plunkett [2]	do	1 S	1 E	W. R	do.[3]	do	Mowry Shale	
312	Poison Spider	Natrona	33 N	83 W	6 Pr	H. H. Hill [3]	July, 1923	Tensleep	
313	do	do	33 N	83 W	6 Pr	do.[3]	do	Sundance	
314	Rock Creek [2]	Carbon	19 N 20 N	78 W 78 W	6 Pr 6 Pr	A. D. Bauer [3]	July, 1920	First and Second Muddy and Dakota.	
315	Salt Creek [2]	Natrona	39 N 40 N	79 and 80 W. 79 and 80 W.	6 Pr 6 Pr	do.[3]	do	First and Second Wall Creek	
316	do	do	39 N	78 W	6 Pr	J. R. Reeve [3]	March, 1924	Third Wall Creek	2, 840
317	Shannon [2]	do	40 N	79 W	6 Pr	A. D. Bauer [3]	July, 1920	Shannon	
318	Teapot Dome	do						Second Wall Creek	
319	Warm Spring [2]	Hot Springs	43 N	93 and 94 W.	6 Pr	A. D. Bauer [3]	July, 1920	Embar	

[2] Composite sample from several wells.

[3] Representative from Bureau of Mines.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Characteristics of crude							Distillation at atmospheric pressure [4]																
										Fraction, up to 50° C. (up to 122° F.)			Fraction, 50° to 75° C. (122° to 167° F.)			Fraction, 75° to 100° C. (167° to 212° F.)			Fraction, 100° to 125° C. (212° to 257° F.)			Fraction, 125° to 150° C. (257° to 302° F.)		
	Color [5]	Specific gravity [6]	A. P. I. gravity (°) [7]	Viscosity at 70° F. (Saybolt seconds) [8]	Viscosity at 100° F. (Saybolt seconds) [8]	Pour point (° F.) [9]	Sulphur (per cent) [10]	First drop (° C.)	First drop (° F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Alaska																								
1	------	0.811	43.0	33	33	(11)	0.12	43	109	1.9	0.660	82.9	4.1	0.675	78.1	9.1	0.714	66.7	11.4	0.743	58.9	7.7	0.752	56.7
Arkansas																								
2	Gr. bl.	.853	34.4	58	48	(11)	.79	40	104	------	------	------	------	------	------	7.4	.692	73.0	7.0	.720	65.0	5.3	.744	58.7
3	Br. bl.	.927	21.1	660	260	(11)	1.80	75	167	------	------	------	------	------	------	1.7	(12)	(12)	2.0	.746	58.2	1.9	(12)	(12)
4	Br. bl.	.952	17.1	4,500	1,300	(11)	2.20	185	365	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
5	Br. bl.	.970	14.4	(13)	5,700	20	2.70	164	327	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
6	Br. bl.	.935	19.8	870	340	(11)	2.40	88	190	------	------	------	------	------	------	.4	(12)	(12)	1.5	.752	56.7	1.1	(12)	(12)
7	Br. bl.	.916	23.0	910	200	(11)	2.10	53	127	------	------	------	.4	(12)	(12)	1.6	.720	65.0	2.5	.736	60.8	2.8	.757	55.4
8	Br. bl.	.899	25.9	310	150	(11)	2.00	68	154	------	------	------	.3	(12)	(12)	1.7	.703	69.8	2.6	.727	63.1	2.6	.745	58.4
9	Br. bl.	.955	16.7	1,900	730	(11)	2.20	92	198	------	------	------	------	------	------	.3	(12)	(12)	.6	(12)	(12)	1.0	(12)	(12)
10	Br. bl.	.929	20.8	690	310	(11)	1.90	76	169	------	------	------	------	------	------	4.2	(12)	(12)	.3	(12)	(12)	.4	.770	52.3
California																								
11	Br. bl.	.967	14.8	(13)	3,800	35	1.30	120	248	------	------	------	------	------	------	------	------	------	.1	(12)	(12)	1.2	(12)	(12)
12	Br. bl.	.873	30.6	78	56	25	.83	45	113	------	------	------	1.3	(12)	(12)	3.5	.712	67.2	5.9	.745	58.4	5.3	.764	53.7
13	Br. bl.	.911	23.8	150	94	(11)	.86	52	126	------	------	------	.8	(12)	(12)	2.4	.734	61.3	7.0	.757	55.4	5.2	.776	50.9
14	Br. bl.	.984	12.3	(13)	(13)	40	3.00	115	239	------	------	------	------	------	------	------	------	------	.5	(12)	(12)	1.6	(12)	(12)
15	Br. bl.	.869	31.3	52	44	(11)	.50	30	86	1.0	.660	82.9	2.3	.673	78.8	5.6	.720	65.0	8.8	.754	56.2	7.3	.776	50.9
16	Br. bl.	.890	27.5	85	60	(11)	.59	25	77	.7	(12)	(12)	1.1	(12)	(12)	2.9	.716	66.1	6.5	.758	55.2	7.1	.782	49.5
17	Br. bl.	1.023	6.8	(13)	(13)	75	2.80	185	365	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
18	Br. bl.	.960	15.9	(13)	3,800	30	4.10	97	207	------	------	------	------	------	------	------	------	------	2.0	(12)	(12)	2.7	.767	53.0
19	Br. bl.	.880	29.3	81	56	10	.67	57	135	------	------	------	.7	(12)	(12)	1.1	.720	65.0	5.1	.752	56.7	4.5	.773	51.6
20	Gr. bl.	.919	22.5	220	110	(11)	.71	63	145	------	------	------	.6	(12)	(12)	.4	(12)	(12)	1.7	.762	54.2	3.1	.779	50.1
21	Br. bl.	.910	24.0	150	86	(11)	.45	50	122	------	------	------	.6	(12)	(12)	1.2	.708	68.4	2.2	.784	57.7	3.0	.777	50.6
22	Br. bl.	.930	20.7	440	180	(11)	.51	110	230	------	------	------	------	------	------	------	------	------	.5	(12)	(12)	.8	(12)	(12)

23	Dk. gr.	.839	37.2	32	31	(11)	.10	25	77	.9	(12)	(12)	2.4	.691	73.3	6.5	.743	58.9	14.9	.777	50.6	16.9	.809	43.4
24	Br. bl.	.963	15.4	5,000	1,300	15	.71	92	198	-----	-----	-----	-----	-----	-----	.4	(12)	(12)	.3	(12)	(12)	.2	(12)	(12)
25	Br. gr.	.970	14.4	(13)	3,600	40	.52	175	347	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
26	Br. bl.	.899	25.9	180	98	35	1.46	35	95	-----	-----	-----	1.2	(12)	(12)	2.5	.713	67.0	4.4	.745	58.4	4.0	.768	52.7
27	Br. bl.	.860	33.0	58	47	(11)	.93	25	77	1.1	(12)	(12)	2.8	.700	70.6	6.3	.734	61.3	9.3	.758	55.2	6.5	.778	50.4
28	Br. bl.	.915	23.1	200	100	(11)	.68	83	181	-----	-----	-----	-----	-----	-----	1.1	(12)	(12)	3.7	.759	54.9	3.6	.781	49.7
29	Br. bl.	.895	26.6	110	68	(11)	.61	74	165	-----	-----	-----	-----	-----	-----	2.3	.740	59.7	6.0	.762	54.2	5.9	.782	49.5
30	Br. bl.	.948	17.8	2,400	690	(11)	1.04	150	302	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
31	Dk. gr.	.805	44.3	33	32	(11)	.19	30	86	.7	(12)	(12)	3.7	.685	75.1	12.0	.719	65.3	17.5	.745	58.4	12.1	.764	53.7
32	Br. bl.	.905	24.9	290	120	(11)	1.42	58	136	-----	-----	-----	2.0	(12)	(12)	1.8	.677	77.5	4.0	.733	60.5	4.2	.763	54.0
33	Br. bl.	.968	14.7	(13)	3,800	30	2.22	160	320	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
34	Br. bl.	.892	27.1	160	100	(11)	1.31	30	86	.8	(12)	(12)	2.0	.713	67.0	3.2	.730	62.3	5.7	.750	57.2	5.1	.771	52.0
35	Br. bl.	.972	14.1	(13)	5,100	30	1.07	176	349	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
36	Br. bl.	.872	30.8	78	58	20	.80	27	81	1.3	(12)	(12)	3.1	.701	70.4	3.5	.735	61.0	7.1	.750	57.2	5.2	.769	52.5
37	Br. bl.	.908	24.3	690	255	(11)	1.59	28	82	.3	(12)	(12)	.6	(12)	(12)	2.2	.720	65.0	4.3	.754	56.2	2.9	.775	51.1
38	Br. bl.	.920	22.3	350	140	(11)	1.34	28	82	.5	(12)	(12)	1.1	.702	70.1	3.0	.729	62.6	5.0	.750	57.2	3.7	.770	52.3
39	Green	.830	39.0	37	34	(11)	.14	25	77	2.6	(12)	(12)	3.9	.682	76.0	7.7	.728	62.9	9.1	.753	56.4	6.6	.772	51.8
40	Br. bl.	.956	16.5	3,400	525	(11)	.85	142	288	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
41	Br. bl.	.944	18.4	1,300	500	(11)	.99	108	226	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.3	(12)	(12)	2.6	.758	55.2
42	Br. bl.	.892	27.1	93	62	(11)	.60	27	81	.2	(12)	(12)	.9	.702	70.1	3.8	.733	61.5	7.4	.757	55.4	5.5	.772	51.8
43	Br. bl.	.925	21.5	330	150	(11)	.75	73	163	-----	-----	-----	-----	-----	-----	.6	.732	61.8	3.1	.754	56.2	5.9	.779	50.1
44	Br. bl.	.893	27.0	120	83	25	.69	49	120	-----	-----	-----	2.5	.701	70.4	3.7	.743	58.9	5.6	.762	54.2	4.4	.779	50.1
45	Br. bl.	.983	12.5	(13)	(13)	45	1.29	176	349	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
46	Br. bl.	.982	12.6	(13)	(13)	35	1.38	207	405	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
47	Br. bl.	.943	18.6	850	330	(11)	.91	93	199	-----	-----	-----	-----	-----	-----	.3	(12)	(12)	1.1	.761	54.4	2.6	.775	51.1
48	Br. bl.	.967	14.8	(13)	(13)	30	1.00	208	406	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
49	Br. bl.	.951	17.3	4,400	1,200	(11)	.96	180	356	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
50	Br. bl.	.916	23.0	305	135	(11)	.75	86	187	-----	-----	-----	-----	-----	-----	.6	(12)	(12)	1.1	(12)	(12)	2.8	.780	49.9
51	Br. bl.	.885	28.4	76	52	(11)	.79	61	142	-----	-----	-----	.5	(12)	(12)	4.1	.746	58.2	6.8	.762	54.2	8.2	.778	50.4
52	Br. bl.	.875	30.2	55	44	(11)	.69	79	174	-----	-----	-----	-----	-----	-----	2.8	.744	58.7	8.9	.766	53.2	8.1	.780	49.9
53	Br. bl.	.987	11.9	(13)	(13)	40	1.63	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
54	Br. bl.	.936	19.7	705	265	(11)	.92	105	221	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.0	.749	57.4	2.3	.779	50.1
55	Br. bl.	.936	19.7	785	270	(11)	.88	96	205	-----	-----	-----	-----	-----	-----	.3	(12)	(12)	1.6	.762	54.2	2.4	.783	49.2
56	Br. bl.	.978	13.2	(13)	4,900	25	1.01	209	408	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
57	Br. bl.	.952	17.1	2,700	890	15	1.63	62	144	-----	-----	-----	.6	(12)	(12)	.8	(12)	(12)	2.2	.740	59.7	2.9	.771	52.0
58	Br. bl.	.920	22.3	1,300	365	45	1.09	26	79	.4	(12)	(12)	.4	(12)	(12)	1.3	(12)	(12)	2.6	.749	57.4	3.7	.780	49.9
59	Br. bl.	.967	14.8	(13)	2,550	20	2.73	100	212	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.2	.750	57.2	2.4	.780	49.9
60	Br. bl.	.851	34.8	50	42	15	.45	27	81	.9	(12)	(12)	2.1	.698	71.2	5.9	.722	64.5	8.6	.749	57.4	7.9	.771	52.0

4 Distillation temperatures taken by A. S. T. M. low-distillation thermometer. (See Bull. 207, pp. 4–18 and 37–44, and Table 2, this report.) Not corrected for emergent stem or barometric pressure. Average laboratory temperature, 25° C. (77° F.); average barometric pressure, 742 mm.

5 Colors (see Tech. Paper 323B, pp. 34–37): 4, orange pale, determined by transmitted light in Union colorimeter; 4½, pale (red), determined by transmitted light in Union colorimeter; 6, dark red, determined by transmitted light in Union colorimeter; 8, very dark red, determined by transmitted light in Union colorimeter; green, bright green by reflected light; dk. gr., clear dark green by reflected light; gr. bl., clear greenish black by reflected light; br. gr., dull brownish green by reflected light; br. bl., dull brownish black by reflected light.

6 See Bull. 207, pp. 37–38.

7 See Table 2.

8 Viscosity reported in seconds (Saybolt Universal viscosimeter) to two significant figures only.

9 Pour and cloud points reported to nearest even 5° F. See Tech. Paper 323B, pp. 37–41.

10 See Tech. Paper 323B, pp. 94–95.

11 Pour point below 5° F.

12 Combined with the next heavier fraction.

13 Viscosity, Saybolt, above 6,000 seconds.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Characteristics of crude							Distillation at atmospheric pressure																	
										Fraction, up to 50° C. (up to 122° F.)			Fraction, 50° to 75° C. (122° to 167° F.)			Fraction, 75° to 100° C. (167° to 212° F.)			Fraction, 100° to 125° C. (212° to 257° F.)			Fraction, 125° to 150° C. (257° to 302° F.)			
	Color	Specific gravity	A. P. I. gravity (°)	Viscosity at 70° F. (Saybolt seconds)	Viscosity at 100° F. (Saybolt seconds)	Pour point (° F.)	Sulphur (per cent)	First drop (° C.)	First drop (° F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
California—Con.																								
61	Gr. bl	0.888	27.9	105	60	35	0.54	77	171	-----	-----	-----	-----	-----	-----	0.9	(12)	(12)	3.2	0.758	55.2	4.7	0.783	49.2
62	Br. bl	.916	23.0	495	250	(11)	2.63	30	86	0.7	(12)	(12)	0.8	(12)	(12)	2.0	0.708	68.4	4.2	.747	57.9	4.7	.768	52.7
63	Br. bl	.918	22.6	230	115	(11)	.55	90	194	-----	-----	-----	-----	-----	-----	.5	(12)	(12)	3.4	.767	53.0	4.5	.788	48.1
64	Br. bl	.952	17.1	1,150	390	(11)	.86	70	158	-----	-----	-----	.2	(12)	(12)	1.0	(12)	(12)	2.1	.752	56.7	2.3	.782	49.5
65	Br. bl	.864	32.3	56	47	(11)	.68	45	113	.1	(12)	(12)	1.9	0.678	77.2	4.9	.718	65.6	7.6	.747	57.9	7.1	.767	53.0
66	Br. bl	.886	28.2	160	86	35	1.73	28	82	1.2	(12)	(12)	2.8	.677	77.5	2.5	.722	64.5	5.2	.745	58.4	5.3	.766	53.2
67	Br. bl	.975	13.6	(13)	2,950	25	.54	175	347	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
68	Br. bl	.917	22.8	435	185	20	1.62	76	169	-----	-----	-----	-----	-----	-----	2.3	.713	67.0	2.8	.752	56.7	3.1	.774	51.3
69	Br. bl	.875	30.2	92	80	35	1.15	27	81	2.2	0.664	81.6	3.4	.682	76.0	4.1	.730	62.3	5.4	.749	57.4	4.8	.768	52.7
70	Br. bl	.794	46.7	33	32	(11)	.47	33	91	.9	(12)	(12)	2.1	.665	81.3	7.8	.719	65.3	14.7	.744	58.7	14.8	.763	54.0
71	Gr. bl	.773	51.6	28	28	(11)	.17	28	82	2.2	.655	84.5	3.0	.688	74.2	10.3	.721	64.8	25.5	.746	58.2	20.7	.765	53.5
72	Br. bl	.917	22.8	270	140	(11)	1.06	69	156	.2	(12)	(12)	3.9	.753	56.4	1.9	.780	49.9	2.2	.795	46.5	4.0	.810	43.2
73	Br. bl	.942	18.7	99	41	(11)	.77	88	190	-----	-----	-----	-----	-----	-----	.6	(12)	(12)	.6	(12)	(12)	1.1	.773	51.6
Colorado																								
74	Green	.880	29.3	185	50	55	.17	88	190	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.8	.732	61.8	1.7	.749	57.4
75	Green	.845	36.0	58	43	20	.17	22	72	1.5	(12)	(12)	2.6	.664	81.6	4.1	.717	65.9	5.3	.746	58.2	4.7	.767	53.0
76	Green	.817	41.7	40	36	30	.07	29	84	.5	(12)	(12)	1.5	.673	78.8	3.9	.714	66.7	7.3	.737	60.5	7.9	.753	56.4
Illinois																								
77	Br. bl	.863	32.5	79	57	(11)	.24	39	102	-----	-----	-----	.8	.690	73.6	1.2	.723	64.2	3.3	.745	58.4	5.5	.764	53.7
Indiana																								
78	Gr. bl	.846	35.8	66	50	(11)	.48	27	81	.6	(12)	(12)	.8	(12)	(12)	2.8	.698	71.2	5.2	.733	61.5	4.9	.753	56.4

Kansas																								
79	Br. bl.	.865	32.1	125	77	30	.25	80	176	-----	-----	-----	-----	-----	-----	-----	-----	-----	4.2	.732	61.8	3.1	.752	56.7
80	Br. bl.	.862	32.1	195	56	30	.41	80	176	-----	-----	-----	-----	-----	-----	1.8	.713	67.0	4.5	.734	61.3	5.8	.752	56.7
81	Br. bl.	.838	37.4	64	49	10	.30	24	75	2.7	(12)	(12)	2.1	.658	83.6	4.7	.700	70.6	6.5	.730	62.3	5.5	.750	57.2
82	Br. bl.	.878	29.7	122	75	(11)	.31	75	167	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.3	.742	59.2	3.2	.753	56.4
83	Br. bl.	.856	33.8	54	44	20	.29	47	117	-----	-----	-----	-----	-----	-----	4.2	.706	68.9	7.8	.733	61.5	6.3	.753	56.4
84	Br. bl.	.853	34.4	59	47	15	.29	53	127	-----	-----	-----	-----	-----	-----	3.1	.710	67.8	5.3	.730	62.3	6.1	.748	57.7
85	Gr. bl.	.853	34.4	66	50	5	.20	54	129	-----	-----	-----	-----	-----	-----	4.1	.701	70.4	5.5	.734	61.3	5.2	.754	56.2
86	Br. bl.	.875	30.2	105	75	(11)	.32	61	142	-----	-----	-----	-----	-----	-----	2.5	.709	68.1	3.9	.734	61.3	4.2	.751	56.9
87	Br. bl.	.870	31.1	85	62	(11)	.30	26	79	-----	-----	-----	-----	-----	-----	3.5	.684	75.4	4.3	.726	63.4	5.0	.749	57.4
88	Br. bl.	.861	32.8	75	53	10	.23	75	167	-----	-----	-----	-----	-----	-----	2.2	.730	62.3	5.8	.737	60.5	5.6	.754	56.2
89	Dk. gr.	.855	34.0	63	47	25	.24	65	149	-----	-----	-----	-----	-----	-----	3.5	.730	62.3	5.4	.751	56.9	5.5	.763	54.0
90	Br. bl.	.937	19.5	390	105	5	.66	85	185	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
91	Gr. bl.	.846	35.8	54	46	(11)	.23	26	79	1.6	(12)	(12)	2.2	.676	77.8	4.7	.709	68.1	5.7	.734	61.3	5.9	.753	56.4
92	Br. bl.	.866	31.9	91	63	(11)	.27	25	77	1.3	(12)	(12)	1.2	.692	73.0	3.9	.713	67.0	5.7	.740	59.7	4.3	.755	55.9
93	Br. bl.	.892	27.1	240	130	(11)	.57	28	82	-----	-----	-----	-----	-----	-----	3.1	.714	66.7	2.8	.734	61.3	3.1	.748	57.7
94	Gr. bl.	.853	34.4	65	49	15	.23	85	185	-----	-----	-----	-----	-----	-----	1.0	(12)	(12)	5.7	.737	60.5	6.0	.753	56.4
95	Br. bl.	.875	30.2	110	70	10	.25	62	144	-----	-----	-----	-----	-----	-----	2.3	.711	67.5	3.7	.740	59.7	4.2	.756	55.7
96	Br. bl.	.882	28.9	145	86	(11)	.24	83	181	-----	-----	-----	-----	-----	-----	1.0	(12)	(12)	2.2	.762	54.2	2.7	.781	49.7
97	Br. bl.	.807	43.8	40	68	25	.14	20	68	4.3	.638	90.3	4.4	.664	81.6	6.2	.702	70.1	9.4	.727	63.1	6.8	.748	57.7
98	Br. bl.	.880	29.3	175	110	(11)	.51	27	81	1.3	(12)	(12)	2.0	.666	81.0	2.9	.708	68.4	4.1	.732	61.8	4.1	.751	56.9
99	Br. bl.	.839	37.2	61	49	20	.24	24	75	2.7	(12)	(12)	2.1	.657	83.9	6.1	.713	67.0	6.1	.734	61.3	5.8	.754	56.2
100	Gr. bl.	.841	36.8	50	42	25	.19	34	93	-----	-----	-----	-----	-----	-----	6.0	.704	69.5	5.3	.738	60.2	6.2	.754	56.2
101	Br. bl.	.879	29.5	135	77	20	.34	60	140	-----	-----	-----	-----	-----	-----	4.2	.744	58.7	1.0	(12)	(12)	1.6	.760	54.7
102	Br. bl.	.876	30.0	120	73	(11)	.32	45	113	-----	-----	-----	-----	-----	-----	3.4	.712	67.2	3.8	.739	60.0	3.7	.758	55.2
103	Br. bl.	.885	28.4	200	105	5	.37	50	122	-----	-----	-----	-----	-----	-----	3.2	.716	66.1	3.3	.736	60.8	3.3	(12)	(12)
104	Br. bl.	.889	27.7	180	93	40	.46	130	266	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.0	(12)	(12)
Kentucky																								
105	Dk. gr.	.844	36.2	60	45	(11)	.14	30	86	1.0	(12)	(12)	2.9	.681	76.3	3.6	.724	63.9	6.0	.741	59.5	6.1	.762	54.2
106	-----	.842	36.6	-----	-----	-----	.25	26	79	1.4	(12)	(12)	2.6	.648	86.9	4.2	.718	65.6	5.5	.742	59.2	5.7	.762	54.2
107	-----	.866	31.9	-----	-----	-----	.13	63	145	-----	-----	-----	1.1	(12)	(12)	1.5	.718	65.6	3.5	.747	57.9	4.0	.767	53.0
108	Green	.835	38.0	50	43	(11)	.21	24	75	1.8	(12)	(12)	3.7	.695	72.1	5.0	.718	65.6	6.7	.738	60.2	6.5	.755	55.9
109	Br. bl.	.853	34.4	105	65	(11)	.23	90	194	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.2	(12)	(12)	1.5	.732	61.8
110	Br. bl.	.902	25.4	-----	-----	-----	.31	68	154	-----	-----	-----	-----	-----	-----	2.3	.732	61.8	1.7	.739	60.0	3.0	.766	53.2
111	-----	.838	37.4	-----	-----	-----	.12	25	77	3.5	.632	92.4	3.3	.682	76.0	6.1	.720	65.0	6.6	.748	57.7	5.9	.771	52.0
112	Dk. gr.	.830	39.0	50	46	(11)	.23	23	73	3.3	.631	92.7	2.6	.673	78.8	5.3	.717	65.9	5.4	.739	60.0	4.8	.757	55.4
113	-----	.869	31.3	-----	-----	-----	.49	27	81	2.4	.640	89.6	4.1	.690	73.6	5.8	.728	62.9	6.7	.750	57.2	6.1	.770	52.3
Louisiana																								
114	Gr. bl.	.919	22.5	300	125	10	.22	145	293	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
115	Br. gr.	.822	40.6	40	37	(11)	.21	73	163	-----	-----	-----	-----	-----	-----	-----	-----	-----	4.6	.742	59.2	5.9	.754	56.2
116	Br. bl.	.850	35.0	62	45	25	.25	60	140	-----	-----	-----	-----	-----	-----	9.4	.729	62.6	1.7	(12)	(12)	3.3	.747	57.9
117	Br. bl.	.820	41.1	84	45	20	.21	60	140	-----	-----	-----	3.5	.720	65.0	(12)	(12)	(12)	7.6	.729	62.6	6.3	.745	58.4
118	Br. bl.	.880	29.3	1,500	165	65	.34	176	349	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
119	Gr. bl.	.925	21.5	700	265	(11)	.68	80	176	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
120	Gr. bl.	.879	29.5	120	62	25	.27	82	180	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.4	.772	51.8	2.9	.786	48.5
121	Br. bl.	.844	36.2	81	46	(11)	.63	27	81	-----	-----	-----	3.5	.670	79.7	4.1	.698	71.2	6.0	.725	63.7	5.5	.745	58.4
122	Gr. bl.	.911	23.8	155	84	(11)	.37	95	203	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

[11] Pour point below 5° F. [12] Combined with the next heavier fraction. [13] Viscosity, Saybolt, above 6,000 seconds.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Characteristics of crude							Distillation at atmospheric pressure																	
										Fraction, up to 50° C. (up to 122° F.)			Fraction, 50° to 75° C. (122° to 167° F.)			Fraction, 75° to 100° C. (167° to 212° F.)			Fraction, 100° to 125° C. (212° to 257° F.)			Fraction, 125° to 150° C. (257° to 302° F.)			
	Color	Specific gravity	A. P. I. gravity (°)	Viscosity at 70° F. (Saybolt seconds)	Viscosity at 100° F. (Saybolt seconds)	Pour point (° F.)	Sulphur (per cent)	First drop (° C.)	First drop (° F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
Louisiana—Con.																									
123	Br. bl	0.901	25.6	270	125	(11)	0.42	160	320	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	
124	Gr. bl	.936	19.7	880	310	------	.33	84	183	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	
Montana																									
125	Br. gr	.776	50.9	------	------	------	.33	42	108	0.5	(12)	(12)	1.9	0.667	80.6	7.3	0.697	71.5	11.2	0.725	63.7	15.3	0.750	57.2	
126	Br. gr	.779	50.1	------	------	------	.35	44	111	.2	(12)	(12)	1.6	.665	81.3	5.4	.697	71.5	13.2	.722	64.5	15.9	.744	58.7	
127	Dk. gr	.866	31.9	67	52	(11)	1.47	27	81	.9	(12)	(12)	2.3	.663	81.9	2.8	.703	69.8	3.7	.731	62.1	3.9	.755	55.9	
128	Dk. gr	.857	33.6	58	48	(11)	1.35	28	82	1.5	(12)	(12)	2.1	.651	85.9	3.5	.692	73.0	4.1	.723	64.2	4.4	.746	58.2	
New Mexico																									
129	4	.735	61.0	30	30	(11)	0.05	25	77	14.0	0.630	93.0	11.3	.662	82.2	11.7	.698	71.2	12.7	.724	63.9	8.0	.742	59.2	
New York																									
130	Dk. gr	.828	39.4	51	44	(11)	.10	30	86	.5	(12)	(12)	1.1	.692	73.0	3.7	.709	68.1	7.0	.734	61.3	6.0	.754	56.2	
Ohio																									
131	Br. bl	.838	37.4	62	48	5	.10	32	90	.9	(12)	(12)	1.8	.676	77.8	4.1	.705	69.2	5.3	.730	62.3	5.5	.748	57.7	
132	Green	.895	26.6	2,300	790	(11)	.13	204	399	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	
133	Dk. gr	.835	38.0	50	42	(11)	.55	28	82	.8	(12)	(12)	1.5	(12)	(12)	4.4	.700	70.6	6.0	.740	59.7	6.3	.752	56.7	
134	Dk. gr	.842	36.6	56	46	(11)	.55	30	86	.4	(12)	(12)	1.3	(12)	(12)	3.3	.707	68.6	4.9	.744	58.7	5.6	.759	54.9	
135	Br. gr	.805	44.3	42	39	(11)	.05	32	90	.8	(12)	(12)	2.1	.663	81.9	4.2	.710	67.8	6.7	.728	62.9	6.4	.746	58.2	

Oklahoma																								
136	Gr. bl	.878	29.7	120	75	5	.62	24	75	1.5	[12]	[12]	1.8	[12]	[12]	2.3	.705	69.2	3.7	.740	59.7	4.7	.757	55.4
137	Gr. bl	.865	32.1	70	51	[11]	.19	68	154	-----	-----	-----	-----	-----	-----	1.8	.710	67.8	4.0	.737	60.5	5.5	.757	55.4
138	Green	.794	46.7	37	35	[11]	.06	25	77	-----	-----	-----	8.3	.654	84.9	7.9	.704	69.5	10.3	.732	61.8	7.9	.748	57.7
139	Dk. gr	.816	41.9	40	37	[11]	.15	26	79	2.9	.643	88.6	3.3	.680	76.6	6.1	.713	67.0	6.6	.736	60.8	7.1	.755	55.9
140	Br. bl	.871	31.0	84	61	20	.25	40	104	-----	-----	-----	-----	-----	-----	2.6	[12]	[12]	3.3	.744	58.7	3.8	.774	51.3
141	Gr. bl	.854	34.2	57	46	[11]	.33	26	79	1.8	[12]	[12]	1.5	.663	81.9	2.6	.707	68.6	4.5	.738	60.2	4.3	.760	54.7
142	Br. gr	.830	39.0	44	40	[11]	.15	-----	-----	-----	-----	-----	2.9	.658	83.6	3.1	.710	67.8	7.7	.739	60.0	4.9	.759	54.9
143	Br. bl	.846	35.8	58	42	15	.19	36	97	.6	[12]	[12]	1.4	.679	76.9	3.9	.712	67.2	5.8	.739	60.0	5.3	.759	54.9
144	Green	.823	40.4	42	38	5	.16	23	73	2.3	[12]	[12]	3.4	.657	83.9	6.4	.708	68.4	8.5	.736	60.8	7.7	.758	55.2
145	Dk. gr	.830	39.0	42	38	5	.24	27	81	-----	-----	-----	3.0	.698	71.2	4.8	.709	68.1	8.4	.735	61.0	7.6	.754	56.2
146	Green	.841	36.8	55	45	[11]	.15	55	131	-----	-----	-----	.5	[12]	[12]	1.9	.718	65.6	5.0	.748	57.7	5.7	.768	52.7
147	Gr. bl	.824	40.2	40	37	[11]	.25	26	79	2.9	[12]	[12]	3.3	.678	77.2	5.9	.716	66.1	7.7	.738	60.2	6.3	.757	55.4
148	Dk. gr	.853	34.4	58	47	[11]	.19	32	90	-----	-----	-----	1.6	[12]	[12]	2.5	.713	67.0	5.1	.747	57.9	5.5	.765	53.5
149	Br. bl	.816	41.9	42	38	10	.08	50	122	-----	-----	-----	5.7	.668	80.3	4.7	.689	73.9	6.1	.717	65.9	6.5	.738	60.2
150	Gr. bl	.837	37.6	50	43	10	.32	23	73	1.3	[12]	[12]	2.6	.668	80.3	4.6	.720	65.0	5.1	.740	59.7	5.2	.757	55.4
151	Gr. bl	.867	31.7	79	55	15	.32	70	158	-----	-----	-----	-----	-----	-----	2.3	.727	63.1	4.3	[12]	[12]	4.0	.756	55.7
152	Br. bl	.852	34.6	77	55	[11]	.19	60	140	-----	-----	-----	-----	-----	-----	1.4	.732	61.8	3.3	.747	57.9	4.1	.761	54.4
153	-----	.878	29.7	59	45	[11]	.58	62	144	-----	-----	-----	-----	-----	-----	.4	[12]	[12]	1.6	.740	59.7	4.3	.760	54.7
154	Br. gr	.855	34.0	64	50	[11]	.14	27	81	-----	-----	-----	-----	-----	-----	2.5	.708	68.4	4.2	.739	60.0	4.9	.756	55.7
155	Br. gr	.841	36.8	55	41	20	.26	35	95	-----	-----	-----	2.5	.695	72.1	3.1	.710	67.8	5.7	.737	60.5	7.0	.754	56.2
156	Br. bl	.857	33.6	72	53	15	.41	32	90	-----	-----	-----	-----	-----	-----	5.6	.710	67.8	5.8	.742	59.2	5.3	.760	54.7
157	Green	.830	39.0	46	40	[11]	.14	28	82	1.6	[12]	[12]	3.0	.679	76.9	5.5	.713	67.0	8.0	.738	60.2	5.9	.760	54.7
158	Dk. gr	.826	39.8	47	37	[11]	.12	29	84	1.5	[12]	[12]	3.3	[12]	[12]	3.8	.687	74.5	8.7	.734	61.3	7.2	.754	56.2
159	Dk. gr	.826	39.8	45	40	[11]	.13	24	75	2.7	.638	90.3	2.3	.677	77.5	4.9	.717	65.9	6.8	.741	59.5	5.1	.760	54.7
160	Br. bl	.869	31.3	81	57	10	.19	70	158	-----	-----	-----	-----	-----	-----	1.9	.713	67.0	3.2	.740	59.7	4.5	.758	55.2
161	Gr. bl	.859	33.2	130	49	[11]	.23	31	88	-----	-----	-----	-----	-----	-----	4.7	.713	67.0	5.0	.739	60.0	5.2	.758	55.2
162	Br. bl	.848	35.4	56	46	10	.40	40	104	-----	-----	-----	3.3	.684	75.4	4.1	.713	67.0	6.6	.735	61.0	6.4	.755	55.9
163	Br. bl	.875	30.2	135	80	[11]	.90	58	136	-----	-----	-----	.8	[12]	[12]	2.7	.718	65.6	4.9	.749	57.4	3.7	.773	51.6
164	Br. gr	.799	45.6	35	34	[11]	.14	23	73	2.5	.632	92.4	4.7	.676	77.8	10.1	.714	66.7	12.0	.739	60.0	9.7	.757	55.4
165	Br. bl	.862	32.7	70	52	[11]	.30	26	79	.5	[12]	[12]	1.1	[12]	[12]	3.4	.715	66.4	4.3	.747	57.9	5.1	.764	53.7
166	Br. bl	.868	31.5	105	69	[11]	.94	27	81	.9	[12]	[12]	1.0	.680	76.6	3.5	.710	67.8	5.3	.738	60.2	4.9	.753	56.4
167	Br. bl	.851	34.8	70	56	[11]	.95	26	79	1.7	[12]	[12]	2.8	.669	80.0	4.9	.705	69.2	6.0	.733	61.5	5.1	.754	56.2
168	Br. bl	.911	23.8	770	320	[11]	1.13	65	149	-----	-----	-----	.5	[12]	[12]	.1	[12]	[12]	.4	[12]	[12]	.6	[12]	[12]
169	Br. bl	.870	31.1	96	64	[11]	.72	24	75	-----	-----	-----	4.4	.688	74.2	2.7	.730	62.3	3.1	.750	57.2	3.4	.765	53.5
170	Br. gr	.842	36.6	58	45	[11]	.13	23	73	.9	[12]	[12]	1.2	[12]	[12]	3.0	.701	70.4	5.2	.746	58.2	5.8	.767	53.0
171	Gr. bl	.858	33.4	93	58	[11]	.72	25	77	-----	-----	-----	3.5	.669	80.0	4.0	.704	69.5	5.2	.731	62.1	4.9	.751	56.9
172	Gr. bl	.837	37.6	-----	-----	-----	.17	26	79	-----	-----	-----	4.2	.676	77.8	3.8	.708	68.4	5.4	.736	60.8	5.9	.755	55.9
173	Gr. bl	.864	32.3	80	69	5	.27	26	79	-----	-----	-----	1.4	[12]	[12]	1.6	.725	63.7	3.7	.745	58.4	4.4	.761	54.4
174	Br. gr	.840	37.0	55	41	10	.13	32	90	-----	-----	-----	3.8	.682	76.0	4.0	.706	68.9	6.3	.732	61.8	6.1	.755	55.9
175	Br. bl	.840	37.0	56	41	15	.33	33	91	-----	-----	-----	3.3	.691	73.3	4.4	.714	66.7	6.2	.734	61.3	6.9	.756	55.7
176	Br. bl	.883	28.8	155	85	[11]	.28	65	149	-----	-----	-----	-----	-----	-----	1.1	[12]	[12]	2.4	.741	59.5	3.1	.760	54.7
177	Dk. gr	.836	37.8	51	44	[11]	.14	25	77	-----	-----	-----	1.9	[12]	[12]	3.5	.703	69.8	5.9	.739	60.0	5.9	.758	55.2
178	6	.769	52.5	55	30	[11]	.06	67	153	-----	-----	-----	-----	-----	-----	9.1	.731	62.1	41.0	.739	60.0	18.3	.753	56.4
179	Dk. gr	.823	40.4	41	37	25	.15	30	86	-----	-----	-----	3.3	.668	80.3	5.3	.704	69.5	7.5	.733	61.5	7.0	.753	56.4
180	Gr. bl	.853	34.4	60	48	[11]	.26	26	79	1.8	[12]	[12]	1.9	.666	81.0	4.4	.723	64.2	5.4	.744	58.7	4.7	.763	54.0
181	Dk. gr	.852	34.6	80	52	[11]	.23	48	118	-----	-----	-----	.7	[12]	[12]	2.0	.715	66.4	4.0	.744	58.7	4.1	.762	54.2
182	Green	.854	34.2	94	57	[11]	.13	44	111	-----	-----	-----	1.6	[12]	[12]	1.4	.713	67.0	2.9	.745	58.4	5.1	.764	53.7
183	Br. bl	.849	35.2	57	45	[11]	.28	22	72	2.7	.670	79.7	2.2	[12]	[12]	4.0	.708	68.4	5.5	.742	59.2	4.5	.762	54.2
184	Dk. gr	.851	34.8	55	46	[11]	3.66	23	73	.7	[12]	[12]	1.0	[12]	[12]	3.3	.714	66.7	5.4	.745	58.4	5.5	.764	53.7
185	Dk. gr	.846	35.8	58	44	30	.17	37	99	-----	-----	-----	-----	-----	-----	3.9	.699	70.9	5.3	.731	62.1	5.7	.753	56.4

[11] Pour point below 5° F.

[12] Combined with the next heavier fraction.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Characteristics of crude							Distillation at atmospheric pressure																
										Fraction, up to 50° C. (up to 122° F.)			Fraction, 50° to 75° C. (122° to 167° F.)			Fraction, 75° to 100° C. (167° to 212° F.)			Fraction, 100° to 125° C. (212° to 257° F.)			Fraction, 125° to 150° C. (257° to 302° F.)		
	Color	Specific gravity	A. P. I. gravity (°)	Viscosity at 70° F. (Saybolt seconds)	Viscosity at 100° F. (Saybolt seconds)	Pour point (° F.)	Sulphur (per cent)	First drop (° C.)	First drop (° F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Oklahoma—Con.																								
186	Dk. gr.	0.809	43.4	38	36	(11)	0.17	25	77	4.4	0.640	89.6	4.1	0.671	79.4	6.7	0.710	67.8	7.8	0.734	61.3	5.8	0.752	56.7
187	Green	.812	42.8	43	35	5	.18	35	95	----	----	----	3.6	.670	79.7	6.2	.711	67.5	8.5	.738	60.2	7.2	.762	54.2
188	Br. bl.	.858	33.4	98	52	20	.33	58	136	----	----	----	----	----	----	4.0	.713	67.0	4.7	.737	60.5	5.8	.758	55.2
189	Br. bl.	.835	38.0	54	46	(11)	.77	25	77	1.7	.638	90.3	2.5	.665	81.3	4.9	.703	69.8	7.3	.734	61.3	6.3	.753	56.4
190	Dk. gr.	.818	41.5	40	37	(11)	.18	30	86	2.0	.676	77.8	3.3	.677	77.5	6.1	.695	72.1	8.1	.725	63.7	6.0	.746	58.2
191	Gr. bl.	.868	31.5	83	54	(11)	.23	47	117	----	----	----	1.9	(12)	(12)	1.5	.718	65.6	3.1	.756	55.7	4.6	.772	51.8
192	Gr. bl.	.875	30.2	98	66	(11)	.44	26	79	2.1	(12)	(12)	1.9	.667	80.6	3.4	.727	63.1	4.5	.746	58.2	3.7	.761	54.4
193	Dk. gr.	.809	43.4	----	----	----	.24	21	70	2.7	.655	84.5	4.4	.669	80.0	7.7	.712	67.2	8.1	.742	59.2	7.6	.760	54.7
194	Green	.807	43.8	36	33	(11)	.19	23	73	2.9	.661	82.6	4.0	.667	80.6	7.6	.713	67.0	7.5	.740	59.7	7.5	.760	54.7
195	Br. bl.	.816	41.9	36	34	(11)	.16	29	84	1.1	(12)	(12)	3.3	.670	79.7	6.6	.698	71.2	7.7	.736	60.8	8.9	.761	54.4
196	Green	.864	32.3	150	68	(11)	.15	36	97	----	----	----	----	----	----	1.7	(12)	(12)	2.7	.732	61.8	3.8	.760	54.7
197	Br. bl.	.859	33.2	72	53	15	.42	40	104	----	----	----	3.4	.686	74.8	3.5	.716	66.1	4.5	.737	60.5	5.3	.755	55.9
198	Green	.823	40.4	38	35	(11)	.16	26	79	1.1	(12)	(12)	3.0	.667	80.6	6.5	.708	68.4	8.6	.737	60.5	7.9	.759	54.9
199	----	.878	29.7	170	82	(11)	.39	56	133	----	----	----	.4	(12)	(12)	2.2	.700	70.6	4.7	.737	60.5	4.0	.757	55.4
200	Br. bl.	.922	22.0	1,200	530	25	1.47	80	176	----	----	----	----	----	----	.7	(12)	(12)	1.7	.753	56.4	2.1	.765	53.5
201	Br. bl.	.870	31.1	92	59	(11)	.32	27	81	.6	(12)	(12)	1.9	(12)	(12)	2.5	.712	67.2	4.2	.749	57.4	4.3	.767	53.0
Pennsylvania																								
202	6	.817	41.7	62	51	30	.19	27	81	----	----	----	----	----	----	5.8	.680	76.6	4.3	.724	63.9	4.2	.742	59.2
203	6	.800	45.4	40	36	(11)	.08	28	82	1.4	.654	84.9	1.9	.660	82.9	4.6	.699	70.9	7.9	.723	64.2	7.6	.742	59.2
204	8	.815	42.1	47	41	25	.08	24	75	1.1	(12)	(12)	2.1	.660	82.9	3.1	.718	65.6	5.7	.737	60.5	5.2	.751	56.9
205	Dk. gr.	.811	43.0	42	38	(11)	.08	30	86	2.1	(12)	(12)	2.5	.652	85.5	4.7	.710	67.8	6.9	.728	62.9	6.0	.753	56.4
206	Green	.823	40.4	47	41	(11)	.10	25	77	1.2	.637	90.6	2.2	.666	81.0	4.4	.709	68.1	7.1	.730	62.3	6.3	.755	55.9
207	Green	.819	41.3	48	42	(11)	.10	28	82	.9	(12)	(12)	2.6	.667	80.6	3.8	.717	65.9	7.0	.744	58.7	5.7	.762	54.2
208	Green	.832	38.6	59	47	(11)	.08	30	86	.4	(12)	(12)	.7	(12)	(12)	3.7	.715	66.4	6.0	.749	57.4	5.0	.771	52.0
209	Br. gr.	.863	32.5	190	97	(11)	.09	40	104	----	----	----	----	----	----	----	----	----	.7	(12)	(12)	2.2	(12)	(12)

Texas																								
210	Gr. bl	.829	39.2	93	54	50	.36	24	75	2.7	.645	87.9	4.1	.670	79.7	5.4	.711	67.5	6.3	.734	61.3	4.7	.750	57.2
211	Dk. gr	.858	33.4	53	44	(11)	.67	40	104				2.5	.685	75.1	4.4	.720	65.0	7.4	.745	58.4	6.0	.762	54.2
212	Dk. gr	.903	25.2	140	78	(11)	.61	77	171										2.3	(12)	(12)	2.7	.773	51.6
213	Dk. gr	.944	18.4	1,700	520	5	.45	160	320															
214	Br. gr	.894	26.8	130	80	(11)	.39	61	142							3.1	.746	58.2	3.1	.764	53.7	2.5	.782	49.5
215	Br. gr	.844	36.2	47	40	(11)	.28	38	100							5.1	.707	68.6	6.1	.739	60.0	6.6	.759	54.9
216	Gr. bl	.850	35.0	64	52	15	.17	27	81							5.3	.696	71.8	5.2	.734	61.3	4.7	.754	56.2
217	Br. bl	.841	36.8	44	38	(11)	.39	27	81				4.3	.675	78.1	5.8	.707	68.6	7.9	.734	61.3	6.5	.753	56.4
218	Br. gr	.839	37.2	47	41	(11)	.20	29	84							5.4	.711	67.5	6.7	.740	59.7	6.3	.759	54.9
219	Br. bl	.802	44.9	38	35	(11)	.17	38	100							3.3	.695	72.1	4.5	.718	65.6	5.9	.736	60.8
220	Green	.834	38.2	42	38	(11)	.23	33	91	1.5	.676	77.8	2.5	.687	74.5	5.7	.717	65.9	7.9	.744	58.7	7.2	.764	53.7
221	Gr. bl	.831	38.8	49	41	(11)	.22	30	86	.9	(12)	(12)	4.5	.680	76.6	3.3	.717	65.9	3.7	.730	62.3	6.5	.743	58.9
222	Br. bl	.879	29.5	120	73	(11)	.29	82	180							.7	(12)	(12)	2.7	.739	60.0	2.7	.766	53.2
223	Br. gr	.923	21.8	225	110	(11)	.28	160	320															
224	Dk. gr	.921	22.1	225	105	(11)	.36	96	205															
225	Dk. gr	.839	37.2	47	42	(11)	.14	35	95							4.1	.728	62.9	6.1	.742	59.2	6.5	.759	54.9
226	Br. bl	.831	38.8	45	41	(11)	.35	30	86	2.0	(12)	(12)	2.7	.665	81.3	7.1	.718	65.6	5.8	.747	57.9	6.7	.765	53.5
227	Br bl	.825	40.0	45	41	(11)	.28	30	86	3.7	.645	87.9	4.4	.674	78.4	6.9	.710	67.8	6.9	.736	60.8	5.9	.754	56.2
228		.824	40.2				.33	28	82	3.0	.650	86.2	2.7	.668	80.3	6.1	.708	68.4	7.5	.734	61.3	5.7	.757	55.4
229	Gr. bl	.926	21.3	510	195	(11)	.22	190	374															
230	Gr. bl	.917	22.8	260	120	(11)	.20	157	315															
231	Gr. bl	.910	24.0	205	98	(11)	.21	110	230													.5	(12)	(12)
232	Dk. gr	.897	26.3	96	61	5	.55	144	291															
233	Br. bl	.839	37.2	45	39	(11)	.41	27	81	5.3	.673	78.8	3.0	.677	77.5	5.1	.710	67.8	7.5	.733	61.5	6.3	.752	56.7
234	Br. gr	.863	32.5	53	45	(11)	.35	30	86				2.3	(12)	(12)	4.2	.703	69.6	5.5	.751	56.9	4.7	.772	51.8
235	Gr. bl	.926	21.3	760	285	(11)	.44	107	225															
236	Br. gr	.938	19.4	1,000	355	10	.43	155	311															
237	Br. bl	.948	17.8	1,100	358	(11)	2.40	143	289													.5	(12)	(12)
238	Green	.817	41.7	39	35	(11)	.27	32	90	2.7	.648	86.9	3.1	.676	77.8	6.7	.713	67.0	6.7	.741	59.5	6.9	.763	54.0
239	Dk. gr	.851	34.8	50	42	(11)	.21	35	95	.6	(12)	(12)	1.5	(12)	(12)	2.4	.710	67.8	4.9	.740	59.7	6.6	.762	54.2
240	Dk. gr	.836	37.8	46	40	(11)	.33	39	102				3.1	.677	77.5	5.8	.711	67.5	7.7	.735	61.0	6.7	.755	55.9
241	Br. bl	.854	34.2	57	44	25	.72	35	95							7.5	.702	70.1	7.2	.735	61.0	6.0	.754	56.2
242	Br. gr	.866	31.9	360	92	45	.30	92	198										.7	(12)	(12)	1.0	(12)	(12)
243	Dk. gr	.831	38.8	33	31	(11)	.12	60	140										10.2	.765	53.5	17.0	.778	50.4
244	Br. bl	.847	35.6	56	46	21	.19	75	167										3.3	.757	55.4	3.5	.760	54.7
245	Green	.923	21.8	120	70	(11)	.25	170	338															
246	Gr. bl	.830	39.0	43	40	20	.16	31	88							8.4	.697	71.5	8.0	.734	61.3	6.5	.753	56.4
247		.923	21.8	700	390	(11)	.39	178	352															
248		.899	25.9	72	57	(11)	.50	53	127													5.0	.777	50.6
249	Dk. gr	.828	39.4	42	39	(11)	.19	24	75	1.3	.640	89.6	1.9	.680	76.6	5.4	.710	67.8	7.9	.736	60.8	5.9	.753	56.4
250	Br. bl	.912	23.7	350	155	(11)	.45	161	322															
251	Br. gr	.839	37.2	155	56	25	.59	25	77	1.4	(12)	(12)	1.9	.664	81.6	3.7	.711	67.5	4.0	.738	60.2	3.9	.758	55.2
252	Br. bl	.841	36.8	44	42	(11)	.38	45	113				1.7	(12)	(12)	4.6	.710	67.8	8.0	.737	60.5	7.1	.755	55.9
253	Dk. gr	.921	22.1	210	105	5	.29	130	266															
254		.927	21.1		240	5	.55	65	149															
255	Green	.811	43.0				.18	28	82	2.7	.635	91.3	3.4	.674	78.4	6.8	.715	66.4	8.8	.738	60.2	7.2	.762	54.2
256	Br. bl	.887	28.0	170	88	(11)	.39	132	270													.6	(12)	(12)
257	Gr. bl	.831	38.8	48	42	(11)	.23	31	88	.5	(12)	(12)	2.1	.675	78.1	4.6	.704	69.5	6.1	.726	63.4	7.5	.746	58.2

[11] Pour point below 5° F.

[12] Combined with the next heavier fraction.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Characteristics of crude							Distillation at atmospheric pressure																	
										Fraction, up to 50° C. (up to 122° F.)			Fraction, 50° to 75° C. (122° to 167° F.)			Fraction, 75° to 100° C. (167° to 212° F.)			Fraction, 100° to 125° C. (212° to 257° F.)			Fraction, 125° to 150° C. (257° to 302° F.)			
	Color	Specific gravity	A. P. I. gravity (°)	Viscosity at 70° F. (Saybolt seconds)	Viscosity at 100° F. (Saybolt seconds)	Pour point (° F.)	Sulphur (per cent)	First drop (° C.)	First drop (° F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
Texas—Contd.																									
258	Green	0.840	37.0	47	40	[11]	0.17	29	84							5.4	0.717	65.9	6.8	0.744	58.7	6.2	0.763	54.0	
259	Br. bl	.822	40.6	42	39	[11]	.26	50	122							3.9	.700	70.6	5.7	.718	65.6	6.7	.732	61.8	
260	Br. bl	.835	38.0	49	43	20	.26	31	88	0.3	[12]	[12]	1.5	0.666	81.0	3.4	.696	71.8	5.7	.723	64.2	6.3	.741	59.5	
261	Dk. gr	.828	39.4	83	54	5	.16	84	183										5.4	.766	53.2	3.4	.776	50.9	
262	Br. bl	.977	13.3	5,500	1,500	[11]	.57	190	374																
263	Green	.931	20.5	175	82	[11]	.23	173	343																
264	Gr. bl	.823	40.4	40	38	[11]	.42	23	73	1.7	[12]	[12]	3.3	.644	88.2	5.5	.698	71.2	6.4	.729	62.6	7.3	.748	57.7	
265	Br. bl	.855	34.0	56	46	[11]	1.40	23	73	1.4	[12]	[12]	2.1	.669	80.0	4.0	.710	67.8	6.0	.734	61.3	6.1	.754	56.2	
266	Gr. bl	.884	28.6	84	58	[11]	.43	44	111										6.4	.726	63.4	3.1	.761	54.4	
267	Gr. bl	.842	36.6	46	40	[11]	.29	43	109	.2	[12]	[12]	1.4	.665	81.3	4.9	.712	67.2	7.6	.737	60.5	6.5	.758	55.2	
268	Gr. bl	.826	39.8	41	39	[11]	.23	24	75	1.9	0.633	92.0	2.9	.669	80.0	5.5	.710	67.8	8.0	.738	60.2	6.7	.758	55.2	
269	Dk. gr	.823	40.4	41	38	[11]	.38	28	82	4.2	.652	85.5	3.7	.672	79.1	7.4	.720	65.0	6.5	.738	60.2	6.1	.760	54.7	
270	Gr. bl	.825	40.0	41	39	[11]	.31	30	86	4.2	.655	84.5	4.1	.672	79.1	6.5	.714	66.7	6.7	.740	59.7	7.7	.762	54.2	
271		.936	19.7	510	200	[11]	2.31	162	324																
272	Green	.847	35.6	55	45	[11]	.13	75	167							2.3	.703	69.8	4.5	.746	58.2	5.6	.761	54.4	
273	Gr. bl	.931	20.5	575	215	[11]	.34	180	356																
274	Br. bl	.866	31.9	45	37	[11]	.33	30	86				4.3	.673	78.8	6.5	.705	69.2	8.7	.733	61.5	6.3	.753	56.4	
275	Gr. bl	.832	38.6	44	39	[11]	.33	35	95	.2	[12]	[12]	3.2	.680	76.6	6.2	.700	70.6	7.5	.730	62.3	6.7	.755	55.9	
276	Br. gr	.837	37.6	49	43	[11]	.15	72	162							1.8	[12]	[12]	5.2	.740	59.7	6.3	.758	55.2	
277	Br. bl	.940	19.0	780	275	[11]	.45	165	329																
278	Gr. bl	.912	23.7	110	65	[11]	.18	103	217										.6	[12]	[12]	.5	[12]	[12]	
279	Dk. gr	.833	38.4	46	39	[11]	.26	27	81	1.4	[12]	[12]	2.0	[12]	[12]	5.7	.699	70.9	6.9	.744	58.7	6.8	.761	54.4	
280	Br. bl	.863	32.5	82	53	[11]	.45	65	149							3.4	.724	63.9	7.0	.727	63.1	3.7	.748	57.7	

70562°—28——5

Utah																								
281	Gr. bl	.834	38.2	49	47	-----	.28	25	77	2.5	.649	86.5	2.7	.669	80.0	5.0	.713	67.0	5.6	.741	59.5	5.2	.761	54.4
West Virginia																								
282	6	.810	43.2	43	39	[11]	.11	27	81	3.3	[12]	[12]	3.7	.655	84.5	5.9	.707	68.6	8.2	.729	62.6	6.8	.747	57.9
283	4½	.797	46.0	39	36	[11]	.19	25	77	3.2	[12]	[12]	3.2	.662	82.2	5.8	.703	69.8	6.7	.727	63.1	7.1	.744	58.7
284	4	.799	45.6	43	39	30	.11	23	73	2.7	[12]	[12]	3.1	.670	79.7	6.7	.700	70.6	8.4	.730	62.3	6.3	.748	57.7
Wyoming																								
285	Green	.861	32.8	67	54	-----	.25	28	82	1.3	[12]	[12]	1.6	.687	74.5	3.8	.708	68.4	5.2	.737	60.5	4.2	.758	55.2
286	Green	.857	33.6	100	58	45	.26	27	81	1.0	[12]	[12]	1.7	.686	74.8	2.3	.704	69.5	5.0	.729	62.6	4.5	.750	57.2
287	Br. bl	.972	14.1	[13]	1,700	25	4.72	70	158	-----	-----	-----	.3	[12]	[12]	.7	[12]	[12]	.5	[12]	[12]	1.2	.714	66.7
288	Br. bl	.912	23.7	340	160	-----	2.84	96	205	-----	-----	-----	-----	-----	-----	.2	[12]	[12]	1.5	.717	65.9	2.9	.738	60.2
289	-----	.914	23.3	-----	250	10	2.42	25	77	.7	[12]	[12]	.8	[12]	[12]	1.2	[12]	[12]	1.9	.749	57.4	2.6	.766	53.2
290	Br. bl	.928	21.0	750	310	-----	2.73	101	214	-----	-----	-----	-----	-----	-----	-----	-----	-----	.3	[12]	[12]	1.5	.738	60.2
291	Green	.804	44.5	36	34	[11]	.13	25	77	3.1	.639	89.9	4.3	.672	79.1	8.3	.716	66.1	10.8	.746	58.2	7.5	.766	53.2
292	Green	.811	43.0	37	35	[11]	.10	23	73	2.3	.638	90.4	3.8	.671	79.4	7.8	.717	65.9	9.9	.745	58.4	7.6	.766	53.2
293	Dk. gr	.807	43.8	35	33	[11]	.44	24	75	1.4	[12]	[12]	2.1	.663	81.9	9.6	.718	65.6	12.7	.744	58.7	12.5	.766	53.2
294	Dk. gr	.843	36.4	54	48	15	.23	38	100	.7	[12]	[12]	2.3	.690	73.6	4.8	.721	64.8	8.8	.741	59.5	5.2	.761	54.4
295	Dk. gr	.809	43.4	37	35	-----	.14	25	77	3.0	.648	86.9	4.1	.673	78.8	8.6	.719	65.3	9.1	.746	58.2	5.4	.763	54.0
296	Br. bl	.906	24.7	250	160	[11]	2.72	25	77	.7	[12]	[12]	1.2	.663	81.9	1.9	.698	71.2	2.7	.724	63.9	3.4	.747	57.9
297	Green	.808	43.6	35	33	[11]	.11	21	70	2.6	.644	88.2	3.9	.672	79.1	7.9	.716	66.1	9.4	.743	58.9	7.3	.763	54.0
298	Green	.803	44.7	38	37	55	.08	27	81	-----	-----	-----	4.3	.665	81.3	7.1	.713	67.0	9.5	.738	60.2	6.5	.754	56.2
299	Br. bl	.894	26.8	180	97	[11]	2.38	45	113	.2	[12]	[12]	1.4	[12]	[12]	2.0	.683	75.7	2.8	.719	65.3	3.5	.746	58.2
300	Br. bl	.939	19.2	2,000	630	[11]	3.26	27	81	.5	[12]	[12]	1.8	.659	83.2	2.0	.696	71.9	2.8	.720	65.0	3.2	.746	58.2
301	Green	.803	44.7	44	37	55	.15	24	75	.9	[12]	[12]	2.4	.666	81.0	5.5	.705	69.2	9.1	.735	61.0	7.9	.754	56.2
302	Green	.847	35.6	580	51	65	.10	112	234	-----	-----	-----	-----	-----	-----	-----	-----	-----	.7	[12]	[12]	3.7	.765	53.5
303	Green	.827	39.6	77	58	50	.10	85	185	-----	-----	-----	-----	-----	-----	1.1	.736	60.8	6.6	.739	60.0	7.3	.754	56.2
304	Br. bl	.913	23.5	450	215	5	2.62	54	129	-----	-----	-----	.7	[12]	[12]	.7	.694	72.4	1.2	.719	65.3	2.4	.745	58.4
305	Dk. gr	.870	31.1	64	48	50	.23	62	144	-----	-----	-----	.7	[12]	[12]	1.9	.736	60.8	4.0	.775	51.1	4.2	.800	45.4
306	Br. bl	.922	22.0	600	235	-----	2.46	104	219	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.1	[12]	[12]	1.6	.742	59.2
307	Br. gr	.867	31.7	135	76	30	.14	100	212	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.3	.736	60.8	2.6	.749	57.4
308	Br. gr	.840	37.0	54	45	[11]	.15	48	118	-----	-----	-----	-----	-----	-----	7.0	.701	70.4	7.6	.745	58.4	6.3	.765	53.5
309	Green	.835	38.0	42	38	25	.18	27	81	1.7	[12]	[12]	2.6	.673	78.8	5.3	.715	66.4	7.1	.745	58.4	5.5	.766	53.2
310	Dk. gr	.848	35.4	85	58	-----	.22	60	140	-----	-----	-----	-----	-----	-----	1 7	.734	61.3	4.1	.741	59.5	6.3	.758	55.2
311	Green	.846	35.8	66	55	25	.55	87	189	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.3	.749	57.4	5.4	.766	53.2
312	Br. bl	.966	15.0	4,100	1,200	[11]	4.61	83	181	-----	-----	-----	-----	-----	-----	.5	[12]	[12]	.9	[12]	[12]	1.3	.728	62.9
313	Br. bl	.942	18.7	2,300	710	30	3.21	82	180	-----	-----	-----	-----	-----	-----	.5	[12]	[12]	.9	[12]	[12]	1.5	.744	58.7
314	Dk. gr	.843	36.4	72	48	50	.27	25	77	3.1	[12]	[12]	2.6	.670	79.7	5.0	.720	65.0	6.2	.745	58.4	4.9	.764	53.7
315	Dk. gr	.841	36.8	95	50	55	.18	25	77	1.8	[12]	[12]	1.7	.667	80.6	4.7	.718	65.6	6.2	.746	58.2	5.3	.767	53.0
316	Dk. gr	.847	35.6	70	45	[11]	.16	26	79	.3	[12]	[12]	5.9	.706	68.9	3.0	.737	60.5	5.9	.754	56.2	4.9	.772	51.8
317	Br. gr	.909	24.2	470	195	[11]	.20	139	282	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
318	Dk. gr	.848	35.4	95	46	50	.20	33	91	.7	.660	82.9	1.5	.685	75.1	4.7	.733	61.5	7.1	.756	55.7	5.7	.778	50.4
319	-----	.987	11.9	-----	-----	15	2.61	82	180	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	2.3	.758	55.2

[11] Pour point below 5° F.   [12] Combined with the next heavier fraction.   [13] Viscosity, Saybolt, above 6,000 seconds.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Distillation at atmospheric pressure [4]—Continued															Distillation at reduced pressure (40 mm.) [14]								
	Fraction, 150° to 175° C. (302° to 347° F.)			Fraction, 175° to 200° C. (347° to 392° F.)			Fraction, 200° to 225° C. (392° to 437° F.)			Fraction, 225° to 250° C. (437° to 482° F.)			Fraction, 250° to 275° C. (482° to 527° F.)			Fraction, up to 200° C. (up to 392° F.)				Fraction, 200° to 225° C. (392° to 437° F.)				
	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (Saybolt seconds)[9]	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (Saybolt seconds)[8]	Cloud point (° F.)[9]
36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Alaska																								
1	6.5	0.783	49.2	5.1	0.797	46.0	5.5	0.811	43.0	5.9	0.825	40.0	6.5	0.837	37.6	5.7	0.846	35.8	40	5.0	0.851	34.8	47	40
Arkansas																								
2	5.1	.769	52.5	4.0	.793	46.9	3.6	.812	42.8	4.1	.822	40.6	5.1	.833	38.4	5.4	.850	35.0	40	7.1	.856	33.8	46	30
3	2.8	.790	47.6	3.1	.822	40.6	3.5	.836	37.8	3.6	.848	35.4	5.5	.862	32.7	4.7	.890	27.5	44	5.3	.904	25.0	51	(11)
4	-----	-----	-----	.8	.829	39.2	1.6	.842	36.6	3.2	.855	34.0	6.7	.868	31.5	2.0	.892	27.1	44	6.7	.902	25.4	51	(11)
5	-----	-----	-----	.9	(12)	(12)	.8	(12)	(12)	1.4	(12)	(12)	5.2	.849	35.2	3.5	.878	29.7	45	5.6	.889	27.7	56	(15)
6	1.8	.774	51.3	2.5	.804	44.5	3.1	.834	38.2	4.3	.849	35.2	4.3	.861	32.8	2.4	.890	27.5	42	26.3	.897	36.3	49	(11)
7	3.7	.782	49.5	2.9	.804	44.5	3.5	.824	40.2	4.4	.839	37.2	5.5	.852	34.6	3.4	.872	30.8	40	5.5	.884	28.6	47	30
8	2.9	.767	53.0	3.3	.791	47.4	3.9	.807	43.8	4.7	.824	40.2	6.2	.841	36.8	3.3	.864	32.3	41	6.3	.873	30.6	48	10
9	1.5	(12)	(12)	2.1	.789	47.8	3.2	.834	38.2	3.5	.846	35.8	6.3	.873	30.6	2.3	.894	26.8	42	5.9	.906	24.7	52	(11)
10	2.2	.824	40.2	2.3	.835	38.0	3.1	.843	36.4	4.1	.852	34.6	6.4	.865	32.1	3.1	.888	27.9	41	5.9	.895	26.6	47	(11)
California																								
11	1.7	.789	47.8	2.3	.825	40.0	3.5	.847	35.6	4.5	.863	32.5	7.3	.882	28.9	2.1	.900	25.7	47	5.2	.916	23.0	59	(11)
12	5.5	.783	49.2	5.3	.801	45.2	5.1	.817	41.7	5.5	.830	39.0	6.8	.844	36.2	3.3	.864	32.3	41	6.6	.870	31.1	47	30
13	4.1	.797	46.0	4.3	.819	41.3	5.1	.843	36.4	5.6	.863	32.5	7.1	.887	28.0	3.1	.903	25.2	46	5.3	.918	22.6	57	(11)
14	2.0	.794	46.7	2.5	.823	40.4	3.7	.844	36.2	4.7	.864	32.3	7.3	.885	28.4	2.6	.890	27.5	41	5.0	.927	21.1	56	(11)
15	5.9	.796	46.3	5.1	.817	41.7	5.0	.834	38.2	5.7	.850	35.0	5.9	.868	31.5	3.2	.896	26.4	42	4.7	.905	24.9	51	(11)
16	4.9	.805	44.3	4.8	.823	40.4	5.5	.840	37.0	6.4	.856	33.8	6.5	.871	31.0	4.1	.892	27.1	42	5.1	.906	24.7	55	(11)
17	-----	-----	-----	4.2	(12)	(12)	5.7	.835	38.0	12.8	.843	36.4	3.0	.847	35.6	1.6	.894	26.8	43	4.6	.925	21.5	120	(15)
18	2.7	(12)	(12)	2.4	.795	46.5	3.1	.828	39.4	4.2	.842	36.6	16.6	.857	33.6	.4	(12)	(12)	(12)	4.0	.907	24.5	55	(15)
19	4.8	.792	47.2	3.6	.815	42.1	5.9	.833	38.4	5.5	.846	35.8	7.5	.854	34.2	8.5	.864	32.3	37	5.8	.870	31.1	44	30
20	3.4	.800	45.4	4.1	.828	39.4	4.8	.848	35.4	6.8	.860	33.0	7.8	.880	29.3	3.5	.889	27.7	40	4.6	.907	24.5	48	(11)
21	3.8	.801	45.2	3.9	.821	40.9	5.6	.843	36.4	6.3	.860	33.0	7.3	.874	30.4	5.7	.886	28.2	40	7.4	.897	26.3	48	(11)
22	2.2	.786	48.5	3.3	.823	40.4	5.8	.843	36.4	5.8	.860	33.0	8.4	.875	30.2	4.8	.897	26.3	41	7.8	.910	24.0	54	(11)

23	11.4	.825	40.0	8.0	.843	36.4	7.3	.868	31.5	8.6	.894	26.8	6.8	.911	23.8	4.1	.924	21.6	40	3.0	.928	21.0	47	50
24	.2	(12)	(12)	1.1	.808	43.6	2.7	.844	36.2	3.7	.862	32.7	7.0	.876	30.0	3.3	.894	26.8	43	7.7	.907	24.5	54	(11)
25				.2	(12)	(12)	.7	(12)	(12)	2.4	.867	31.7	5.4	.889	27.7	3.5	.901	25.6	48	7.3	.914	23.3	70	(11)
26	4.5	.786	48.5	3.9	.804	44.5	4.7	.819	41.3	5.0	.836	37.8	6.2	.851	34.8	3.2	.863	32.5	42	5.6	.871	31.0	48	30
27	4.8	.796	46.3	3.7	.812	42.8	5.0	.824	40.2	5.0	.836	37.8	6.0	.847	35.6	2.9	.867	31.7	42	4.7	.869	31.3	49	30
28	3.9	.808	43.6	4.9	.826	39.8	5.9	.843	36.4	7.3	.857	33.6	7.8	.872	30.8	3.1	.898	26.1	43	6.5	.907	24.5	52	(11)
29	5.0	.805	44.3	4.8	.825	40.0	5.7	.841	36.8	6.5	.854	34.2	7.0	.870	31.1	3.9	.894	26.8	42	5.3	.902	25.4	52	(11)
30	1.0	(12)	(12)	2.9	.830	39.0	4.9	.855	34.0	5.8	.868	31.5	7.8	.881	29.1	3.4	.901	25.6	42	5.7	.912	23.7	54	(11)
31	8.5	.783	49.2	5.9	.802	44.9	6.1	.817	41.7	5.7	.831	38.8	4.7	.845	36.0	2.3	.867	31.7	42	3.8	.871	31.0	50	10
32	3.7	.782	49.5	2.7	.803	44.7	3.7	.817	41.7	4.3	.830	39.0	6.7	.844	36.2	3.7	.862	32.7	47	4.9	.873	30.6	52	25
33	.7	(12)	(12)	1.4	.806	44.1	2.2	.834	38.2	3.9	.854	34.2	7.4	.868	31.5	4.0	.896	26.4	44	2.6	.904	25.0	53	(11)
34	4.1	.791	47.4	4.1	.810	43.2	3.5	.825	40.0	4.4	.836	37.8	5.6	.849	35.2	3.0	.867	31.7	42	5.3	.877	29.9	48	25
35				.7	(12)	(12)	2.6	.843	36.4	2.4	.863	32.5	5.9	.880	29.3	2.2	.902	25.4	44	5.5	.917	22.8	63	(11)
36	5.1	.786	48.5	4.0	.804	44.5	4.4	.818	41.5	5.2	.831	38.8	5.7	.845	36.0	3.4	.864	32.3	41	5.3	.872	30.8	48	35
37	2.7	.795	46.6	2.8	.810	43.2	3.9	.828	39.4	4.9	.840	37.0	6.1	.853	34.4	2.1	.874	30.4	44	5.1	.883	28.8	49	10
38	3.6	.791	47.4	3.1	.808	43.6	4.5	.824	40.2	4.3	.835	38.0	6.1	.850	35.0	3.8	.875	30.2	44	4.7	.884	28.6	50	20
39	6.7	.787	48.3	5.3	.805	44.3	6.1	.821	40.9	6.1	.838	37.4	6.8	.851	34.8	4.0	.867	31.7	40	5.5	.876	30.0	47	40
40	2.3	.777	50.6	2.8	.814	42.3	4.5	.841	36.8	5.4	.861	32.8	7.6	.879	29.5	3.1	.917	22.8	50	7.5	.930	20.7	66	(11)
41	3.7	.797	46.0	3.8	.828	39.4	4.2	.850	35.0	5.6	.873	30.6	5.9	.886	28.2	5.1	.909	24.2	43	4.6	.924	21.6	66	(11)
42	4.5	.794	46.7	4.9	.819	41.3	4.9	.840	37.0	6.2	.858	33.4	6.1	.875	30.2	4.7	.899	25.9	44	5.2	.910	24.0	57	(11)
43	4.7	.802	44.9	4.1	.824	40.2	5.3	.847	35.6	6.1	.867	31.7	6.9	.885	28.4	3.5	.909	24.2	45	5.9	.924	21.6	62	(11)
44	4.0	.803	44.7	3.7	.823	40.4	4.1	.838	37.4	4.9	.848	35.4	6.0	.860	33.0	3.5	.879	29.5	44	5.2	.884	28.6	50	30
45				1.2	(12)	(12)	2.3	.839	37.2	4.0	.869	31.3	6.9	.889	27.7	3.6	.918	22.6	48	5.3	.931	20.5	74	(11)
46							1.7	.848	35.4	3.4	.866	31.9	8.0	.882	28.9	3.6	.912	23.7	53	5.0	.926	21.3	77	(11)
47	3.0	.800	45.4	4.1	.822	40.6	4.3	.845	36.0	5.8	.861	32.8	7.9	.882	28.9	5.5	.909	24.2	45	5.3	.926	21.3	64	(11)
48							1.5	.855	34.0	3.7	.865	32.1	7.4	.888	27.9	4.5	.915	23.1	48	7.2	.928	21.0	69	(11)
49							3.2	.847	35.6	4.6	.868	31.5	6.1	.878	29.7	2.5	.890	27.5	42	8.7	.904	25.0	53	(11)
50	2.9	.803	44.7	3.2	.823	40.4	4.9	.840	37.0	6.7	.858	33.4	8.1	.869	31.3	3.4	.879	29.5	40	8.1	.890	27.5	47	10
51	7.1	.794	46.7	6.7	.813	42.6	5.5	.830	39.0	6.1	.845	36.0	6.0	.864	32.3	4.3	.884	28.6	42	3.8	.897	26.3	57	(11)
52	7.8	.800	45.4	6.9	.815	42.1	6.7	.832	38.6	6.5	.848	35.4	6.1	.863	32.5	4.6	.881	29.1	46	4.1	.890	27.5	52	(11)
53																11.4	.889	27.7	40	6.4	.927	21.1	59	(11)
54	2.9	.803	44.7	3.4	.824	40.2	4.8	.845	36.0	6.2	.865	32.1	7.5	.881	29.1	4.7	.901	25.6	43	6.4	.917	22.8	57	(11)
55	2.8	.806	44.1	3.5	.830	39.0	4.8	.845	36.0	5.7	.862	32.7	7.3	.880	29.3	5.0	.901	25.6	43	5.3	.913	23.5	56	(11)
56							1.2	.843	36.4	3.6	.867	31.7	6.8	.882	28.9	5.0	.904	25.0	45	6.3	.930	20.7	69	(11)
57	3.5	.795	46.5	3.0	.819	41.3	4.6	.841	36.8	4.7	.862	32.7	6.7	.880	29.3	2.0	.897	26.3	42	4.5	.913	23.5	56	(11)
58	3.3	.808	43.6	3.0	.819	41.3	3.5	.838	37.4	5.0	.848	35.4	6.3	.860	33.0	3.0	.874	30.4	41	5.5	.883	28.8	49	25
59	2.0	.798	45.8	2.7	.820	41.1	3.5	.844	36.2	5.3	.864	32.3				6.7	.895	26.6	45	5.2	.916	23.0	96	(11)
60	5.9	.792	47.2	5.4	.805	44.3	5.3	.819	41.3	6.3	.832	38.6	6.6	.842	36.6	3.7	.864	32.3	40	4.8	.867	31.7	47	35
61	4.9	.803	44.7	5.1	.821	40.9	6.4	.834	38.2	7.6	.841	36.8	7.3	.852	34.6	5.0	.865	32.1	42	7.3	.873	30.6	48	25
62	4.9	.788	48.1	4.5	.810	43.2	5.0	.828	39.4	5.3	.845	36.0	6.1	.862	32.7	2.4	.885	28.4	42	5.3	.894	26.8	51	15
63	4.7	.810	43.2	4.9	.827	39.6	5.7	.844	36.2	7.1	.859	33.2	7.3	.874	30.4	2.8	.891	27.3	43	5.7	.902	25.4	53	(11)
64	2.7	.806	44.1	3.1	.828	39.4	4.1	.850	35.0	5.1	.874	30.4	6.5	.898	26.1	3.5	.911	23.8	43	5.3	.926	21.3	55	(11)

4 Distillation temperatures taken by A. S. T. M. low-distillation thermometer. (See Bull. 207, pp. 4–18 and 37–44, and Table 2, this report.) Not corrected for emergent stem or for barometric pressure. Average laboratory temperature, 25° C. (77° F.); average barometric pressure, 742 mm.

8 Viscosity reported in seconds (Saybolt Universal viscosimeter) to two significant figures only.

9 Pour and cloud points reported to nearest even 5° F. (See Tech. Paper 323B, pp. 37–41.)

11 Pour point below 5° F.

12 Combined with the next heavier fraction.

14 Distillation temperatures taken by A. S. T. M. low-distillation thermometer. (See Bull. 207, pp. 19–33 and 37–54, and Table 2, this report.) Not corrected for emergent stem or for barometric pressure. Average laboratory temperature, 25° C. (77° F.); average barometric pressure, 742 mm.

15 Sample too dark in color to allow determination of cloud point.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Distillation at atmospheric pressure—Continued															Distillation at reduced pressure (40 mm.)								
	Fraction, 150° to 175° C. (302° to 347° F.)			Fraction, 175° to 200° C. (347° to 392° F.)			Fraction, 200° to 225° C. (392° to 437° F.)			Fraction, 225° to 250° C. (437° to 482° F.)			Fraction, 250° to 275° C. (482° to 527° F.)			Fraction, up to 200° C. (up to 392° F.)				Fraction, 200° to 225° C. (392° to 437° F.)				
	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (Saybolt seconds)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (Saybolt seconds)	Cloud point (° F.)
36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
California—Con.																								
65	5.7	0.786	48.5	5.6	0.804	44.5	5.2	0.820	41.1	5.4	0.833	38.4	6.7	0.847	35.6	3.9	0.867	31.7	41	5.1	0.875	30.2	49	20
66	4.5	.785	48.8	4.0	.802	44.9	4.5	.817	41.7	4.9	.830	39.0	5.7	.845	36.0	3.2	.862	32.7	41	5.3	.870	31.1	49	40
67	-----	-----	-----	1.1	(12)	(12)	2.4	.841	36.8	3.4	.863	32.5	5.3	.882	28.9	2.4	.909	24.2	44	5.6	.922	22.0	62	(11)
68	3.1	.793	46.9	3.3	.812	42.8	3.9	.829	39.2	4.7	.843	36.4	3.6	.853	34.4	6.1	.863	32.5	40	5.8	.883	28.8	49	40
69	4.8	.786	48.5	3.9	.805	44.3	4.4	.820	41.1	4.9	.834	38.2	5.7	.846	35.8	3.7	.862	32.7	42	4.9	.872	30.8	49	40
70	13.3	.779	50.1	10.8	.794	46.7	9.1	.807	43.8	6.8	.817	41.7	4.9	.829	39.2	1.9	.843	36.4	40	1.9	.855	34.0	46	35
71	12.4	.783	49.2	7.0	.801	45.2	5.1	.816	41.9	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
72	4.0	.810	43.2	3.9	.826	39.8	5.6	.845	36.0	6.2	.856	33.8	7.8	.865	32.1	4.6	.883	28.8	43	6.1	.894	26.8	53	(11)
73	2.3	.801	45.2	3.6	.825	40.0	3.4	.846	35.8	5.4	.862	32.7	7.9	.877	29.9	2.6	.888	27.9	41	5.2	.900	25.7	49	(11)
Colorado																								
74	2.6	.763	54.0	2.8	.775	51.1	3.3	.792	47.2	4.9	.806	44.1	6.3	.818	41.5	8.5	.840	37.0	40	7.7	.846	35.8	47	35
75	4.3	.785	48.8	3.6	.801	45.2	4.3	.815	42.1	5.2	.824	40.2	6.7	.832	38.6	5.0	.847	35.6	40	7.3	.851	34.8	46	40
76	7.3	.768	52.7	6.3	.784	49.0	6.3	.799	45.6	6.3	.810	43.2	7.9	.820	41.1	4.2	.845	36.0	41	7.7	.848	35.4	45	40
Illinois																								
77	4.5	.783	49.2	5.1	.804	44.5	4.5	.821	40.9	4.8	.834	38.2	5.2	.845	36.0	2.7	.852	34.6	43	5.3	.859	33.2	48	20
Indiana																								
78	5.9	.772	51.8	5.8	.790	47.6	4.8	.804	44.5	7.0	.817	41.7	7.4	.825	40.0	4.1	.838	37.4	(16)	6.1	.847	35.6	33	35
Kansas																								
79	4.7	.770	52.3	4.2	.785	48.8	5.3	.800	45.4	5.6	.816	41.9	6.1	.831	38.8	5.1	.848	35.4	40	6.3	.857	33.6	48	30
80	6.6	.773	51.6	5.5	.794	46.7	6.3	.814	42.3	6.5	.830	39.0	7.7	.843	36.4	4.2	.858	33.4	40	6.9	.866	31.9	47	20
81	5.5	.769	52.5	5.8	.789	47.8	4.2	.802	44.9	5.3	.818	41.5	5.8	.833	38.4	4.6	.856	33.8	40	5.2	.861	32.8	45	25

82	5.1	.773	51.6	4.3	.792	47.2	5.3	.814	42.3	6.1	.825	40.0	6.2	.841	36.8	4.5	.860	33.0	41	7.0	.866	31.9	49	20
83	6.5	.772	51.8	5.0	.789	47.8	6.7	.809	43.4	6.0	.825	40.0	8.0	.841	36.8	6.3	.859	33.2	42	7.0	.869	31.3	48	35
84	6.6	.768	52.7	6.2	.788	48.1	6.4	.807	43.8	6.8	.822	40.6	7.3	.836	37.8	5.8	.855	34.0	41	6.3	.866	31.9	48	35
85	5.8	.773	51.6	5.3	.790	47.6	5.9	.806	44.1	6.2	.820	41.1	6.5	.834	38.2	5.3	.855	34.0	40	5.9	.861	32.8	47	30
86	4.8	.773	51.6	4.8	.794	46.7	4.7	.812	42.8	5.0	.825	40.0	5.6	.839	37.2	6.9	.856	33.8	41	6.0	.868	31.5	50	25
87	3.6	.768	52.7	4.8	.787	48.3	4.6	.806	44.1	5.8	.822	40.6	5.8	.837	37.6	6.3	.860	33.0	41	5.6	.868	31.5	48	25
88	6.2	.774	51.3	5.3	.794	46.7	5.3	.816	41.9	6.2	.829	39.2	6.7	.839	37.2	6.9	.856	33.8	41	6.4	.863	32.5	48	30
89	5.7	.786	48.5	5.2	.792	47.2	5.7	.804	44.5	5.7	.822	40.6	5.6	.836	37.8	7.3	.854	34.2	42	6.1	.861	32.8	48	25
90	-----	-----	-----	-----	-----	-----	2.1	.800	45.4	3.2	.853	34.4	3.9	.865	32.1	4.7	.876	30.0	43	6.6	.886	28.2	52	10
91	5.1	.772	51.8	4.7	.787	48.3	4.9	.803	44.7	4.5	.817	41.7	5.6	.831	38.8	5.2	.851	34.8	40	5.3	.858	33.4	47	25
92	4.1	.775	51.1	4.2	.793	46.9	3.8	.808	43.6	4.8	.822	40.6	5.3	.833	38.4	5.9	.854	34.2	41	4.8	.861	32.8	49	25
93	3.7	.765	53.5	4.4	.785	48.8	5.9	.805	44.3	5.0	.821	40.9	5.4	.836	37.8	4.9	.857	33.6	41	4.9	.867	31.7	49	25
94	6.7	.773	51.6	6.5	.790	47.6	6.7	.808	43.6	6.4	.820	41.1	7.1	.834	38.2	5.1	.855	34.0	41	6.1	.865	32.1	48	30
95	5.1	.776	50.9	3.7	.793	46.9	5.2	.809	43.4	5.2	.823	40.4	6.2	.838	37.4	4.3	.861	32.8	41	6.4	.864	32.3	48	25
96	3.0	.798	45.8	3.7	.816	41.9	5.0	.825	40.0	6.9	.839	37.2	6.5	.848	35.4	5.3	.863	32.5	41	7.3	.873	30.6	50	25
97	7.2	.766	53.2	6.7	.783	49.2	5.4	.799	45.6	6.2	.813	42.6	5.5	.825	40.0	5.1	.847	35.6	41	4.8	.854	34.2	46	30
98	4.2	.771	52.0	3.8	.790	47.6	4.3	.807	43.8	4.7	.823	41.4	5.0	.839	37.2	3.3	.860	33.0	42	5.9	.866	31.9	49	25
99	5.2	.773	51.6	5.2	.790	47.6	5.3	.807	43.8	5.5	.820	41.1	5.8	.834	38.2	4.7	.854	34.2	40	5.1	.860	33.0	46	30
100	6.7	.772	51.8	5.9	.789	47.8	6.2	.805	44.3	6.3	.819	41.3	6.0	.834	38.2	4.9	.853	34.4	41	6.4	.860	33.0	47	30
101	3.6	.779	50.1	3.8	.799	45.6	3.7	.813	42.6	5.7	.827	39.6	6.0	.837	37.6	4.7	.855	34.0	40	6.8	.862	32.7	47	30
102	4.1	.779	50.1	3.8	.799	45.6	5.0	.813	42.6	5.2	.828	39.4	6.1	.840	37.0	4.7	.861	32.8	42	6.7	.867	31.7	50	25
103	3.4	.762	54.2	4.1	.787	48.3	4.7	.805	44.3	4.8	.822	40.6	5.1	.834	38.2	4.3	.859	33.2	41	6.8	.864	32.3	47	25
104	3.0	.799	45.6	3.8	.817	41.7	5.2	.830	39.0	5.7	.837	37.6	8.0	.843	36.4	6.1	.856	33.8	40	8.5	.862	32.7	47	30
Kentucky																								
105	5.9	.775	51.1	5.7	.790	47.6	5.1	.805	44.3	5.7	.815	42.1	6.5	.835	38.0	3.7	.843	36.4	(16)	6.9	.852	34.6	37	30
106	6.1	.782	49.5	5.3	.795	46.5	5.3	.805	44.3	5.6	.822	40.6	5.8	.835	38.0	5.5	.845	36.0	(16)	4.8	.855	34.0	45	45
107	5.2	.787	48.3	4.4	.805	44.3	4.7	.815	42.1	5.2	.825	40.0	6.8	.839	37.2	4.5	.853	34.4	41	5.9	.856	33.8	47	15
108	4.6	.775	51.1	4.8	.794	46.7	6.2	.805	44.3	5.0	.820	41.1	7.2	.828	39.4	3.5	.842	36.6	(16)	4.2	.850	35.0	47	45
109	3.0	.755	55.9	5.5	.770	52.3	7.9	.788	48.1	7.2	.804	44.5	9.4	.817	41.7	4.4	.837	37.6	40	7.1	.844	36.2	45	35
110	3.1	.784	49.0	2.5	.799	45.6	4.0	.812	42.8	5.3	.822	40.6	6.7	.837	37.6	3.3	.851	34.8	42	5.4	.859	33.2	50	25
111	5.1	.789	47.8	5.4	.808	43.6	5.2	.814	42.3	4.0	.820	41.1	5.4	.842	36.6	4.4	.845	36.0	(16)	5.3	.850	35.0	35	25
112	5.2	.777	50.6	3.6	.792	47.2	4.3	.806	44.1	5.2	.820	41.1	5.5	.829	39.2	3.9	.859	33.2	42	3.6	.868	31.5	50	30
113	5.8	.792	47.2	5.0	.810	43.2	5.7	.825	40.0	5.7	.838	37.4	5.9	.853	34.4	6.1	.860	33.0	(16)	4.9	.864	32.3	57	35
Louisiana																								
114	-----	-----	-----	4.1	.830	39.0	4.8	.855	34.0	7.2	.875	30.2	10.1	.889	27.7	10.7	.908	24.3	46	10.3	.914	23.3	61	(11)
115	7.1	.767	53.0	10.0	.778	50.4	11.3	.792	47.2	13.3	.805	44.3	11.5	.818	41.5	6.1	.837	37.6	40	5.7	.854	34.2	46	35
116	6.5	.765	53.5	4.8	.779	50.1	5.7	.793	46.9	6.5	.806	44.1	6.7	.817	41.7	5.3	.838	37.4	40	7.2	.843	36.4	46	30
117	9.7	.757	55.4	8.1	.771	52.0	9.3	.783	49.2	7.0	.797	46.0	6.1	.810	43.2	4.8	.839	37.2	40	6.3	.845	36.0	47	40
118	-----	-----	-----	1.9	.825	40.0	2.3	.843	36.4	3.7	.847	35.6	7.1	.851	34.8	6.2	.851	34.8	42	11.1	.853	34.4	47	30
119	.5	(12)	(12)	1.3	(12)	(12)	3.6	.861	32.8	5.7	.875	30.2	8.6	.883	28.8	7.8	.895	26.6	46	9.5	.904	25.0	62	(11)
120	3.2	.808	43.6	4.0	.825	40.0	4.3	.836	37.8	5.9	.841	36.8	8.3	.844	36.2	7.0	.853	34.4	40	9.7	.862	32.7	46	35
121	5.3	.764	53.7	5.8	.781	49.7	4.8	.796	46.3	5.5	.812	42.8	5.2	.825	40.0	5.0	.851	34.8	41	5.5	.857	33.6	47	30
122	1.4	(12)	(12)	4.7	.847	35.6	4.9	.864	32.3	12.3	.877	29.9	10.6	.893	27.0	9.7	.908	24.3	46	9.3	.917	22.8	71	(11)
123	-----	-----	-----	3.0	.828	39.4	4.3	.852	34.6	6.8	.868	31.5	7.2	.877	29.9	7.5	.892	27.1	44	8.5	.897	26.3	54	10
124	.5	(12)	(12)	1.8	(12)	(12)	2.1	.856	33.8	6.5	.879	29.5	7.2	.891	27.3	7.3	.911	23.8	48	8.6	.924	21.6	65	(11)

[11] Pour point below 5° F. [12] Combined with the next heavier fraction. [16] Below 30.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Distillation at atmospheric pressure—Continued															Distillation at reduced pressure (40 mm.)								
	Fraction, 150° to 175° C. (302° to 347° F.)			Fraction, 175° to 200° C. (347° to 392° F.)			Fraction, 200° to 225° C. (392° to 437° F.)			Fraction, 225° to 250° C. (437° to 482° F.)			Fraction, 250° to 275° C. (482° to 527° F.)			Fraction, up to 200° C. (up to 392° F.)				Fraction, 200° to 225° C. (392° to 437° F.)				
	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (Saybolt seconds)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (Saybolt seconds)	Cloud point (° F.)
36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Montana																								
125	12.7	0.767	53.0	11.2	0.784	49.0	10.5	0.798	45.8	9.3	0.811	43.0	6.1	0.824	40.2	----	----	----	----	----	----	----	----	----
126	12.5	.763	54.0	11.9	.783	49.2	10.5	.800	45.4	9.8	.811	43.0	7.1	.825	40.0	----	----	----	----	----	----	----	----	----
127	4.0	.778	50.4	4.0	.801	45.2	4.5	.819	41.3	5.1	.838	37.4	7.0	.857	33.6	3.1	0.881	29.1	41	6.1	0.892	27.1	47	[11]
128	4.2	.768	52.7	4.2	.791	47.4	4.5	.809	43.4	4.9	.825	40.0	7.3	.847	35.6	5.4	.871	31.0	40	5.0	.884	28.6	48	15
New Mexico																								
129	7.5	.763	54.0	5.6	.780	49.9	3.9	.796	46.3	3.8	.810	43.2	4.4	.824	40.2	----	----	----	----	----	----	----	----	----
New York																								
130	6.4	.768	52.7	5.3	.778	50.4	5.5	.790	47.6	5.7	.802	44.9	6.3	.813	42.6	4.1	.835	38.0	39	6.2	.840	37.0	44	35
Ohio																								
131	5.4	.766	53.2	4.8	.781	49.7	5.2	.792	47.2	5.5	.805	44.3	6.3	.816	41.9	4.0	.832	38.6	40	5.7	.838	37.4	46	35
132	----	----	----	----	----	----	.7	[12]	[12]	1.7	.848	35.4	5.9	.854	34.2	1.2	.866	31.9	42	4.2	.880	29.3	54	[11]
133	6.1	.772	51.8	5.9	.787	48.3	6.0	.801	45.2	6.6	.817	41.7	6.6	.825	40.0	4.0	.838	37.4	[16]	5.9	.846	35.8	33	45
134	6.3	.780	49.9	5.2	.793	46.9	6.1	.805	44.3	6.3	.821	40.9	7.6	.827	39.6	4.3	.837	37.6	[16]	6.5	.844	36.2	32	35
135	7.1	.763	54.0	6.2	.773	51.6	6.3	.785	48.8	6.8	.798	45.8	7.1	.810	43.2	5.4	.828	39.4	[16]	5.9	.840	37.0	32	40
Oklahoma																								
136	4.3	.771	52.0	4.4	.793	46.9	4.9	.810	43.2	5.1	.825	40.0	6.5	.840	37.0	3.9	.862	32.7	42	5.8	.871	31.0	49	25
137	5.5	.776	50.9	5.3	.795	46.5	5.2	.813	42.6	7.2	.828	39.4	7.1	.842	36.6	5.7	.858	33.4	40	5.0	.869	31.3	48	25
138	5.7	.763	54.0	6.1	.777	50.6	5.3	.792	47.2	6.2	.803	44.7	6.3	.815	42.1	4.3	.837	37.6	41	5.1	.841	36.8	48	30
139	6.2	.773	51.6	5.4	.788	48.1	5.4	.804	44.5	5.4	.817	41.7	5.6	.830	39.0	4.9	.848	35.4	40	5.6	.860	33.0	49	30
140	4.8	.794	46.7	4.5	.812	42.8	5.7	.825	40.0	6.1	.837	37.6	6.7	.847	35.6	7.3	.867	31.7	43	6.5	.874	30.4	52	25
141	5.1	.782	49.5	4.8	.800	45.4	5.5	.816	41.9	6.1	.829	39.2	6.8	.841	36.8	4.1	.849	35.2	41	6.6	.856	33.8	49	25
142	6.0	.778	50.4	5.3	.794	46.7	4.7	.810	43.2	5.1	.823	40.4	5.1	.836	37.8	6.4	.853	34.4	42	4.7	.866	31.9	51	30
143	6.1	.779	50.1	5.0	.796	46.3	5.7	.812	42.8	6.6	.825	40.0	6.8	.840	37.0	5.6	.858	33.4	41	5.8	.865	32.1	48	30

144	5.9	.775	51.1	6.2	.790	47.6	5.7	.805	44.3	6.4	.820	41.1	5.5	.833	38.4	5.1	.855	34.0	41	5.6	.860	33.0	46	30
145	7.5	.773	51.6	5.0	.789	47.8	6.2	.802	44.9	6.1	.818	41.5	5.7	.831	38.8	4.8	.850	35.0	41	5.9	.860	33.0	48	30
146	5.2	.776	50.9	5.8	.789	47.8	5.9	.804	44.5	7.3	.817	41.7	6.4	.825	40.0	5.7	.847	35.6	40	7.3	.853	34.4	47	30
147	6.7	.775	51.1	6.0	.792	47.2	6.2	.807	43.8	5.8	.821	40.9	6.1	.833	38.4	5.2	.854	34.2	41	5.5	.862	32.7	48	35
148	6.2	.782	49.5	5.3	.798	45.8	5.5	.812	42.8	6.2	.825	40.0	6.1	.837	37.6	4.3	.850	35.0	42	6.6	.863	32.5	49	30
149	5.8	.758	55.2	5.6	.773	51.6	5.7	.787	48.3	6.3	.802	44.9	6.9	.817	41.7	5.2	.841	36.8	41	6.3	.846	35.8	47	40
150	5.8	.774	51.3	5.1	.791	47.4	5.2	.808	43.6	5.8	.822	40.6	5.9	.834	38.2	4.7	.846	35.8	41	6.8	.862	32.7	50	35
151	5.1	.784	49.0	4.7	.803	44.7	5.7	.818	41.5	6.5	.829	39.2	7.0	.841	36.8	5.9	.860	33.0	40	7.6	.867	31.7	48	25
152	5.2	.771	52.0	6.2	.783	49.2	6.5	.795	46.5	7.1	.809	43.4	7.1	.821	40.9	7.2	.841	36.8	41	6.8	.851	34.8	47	30
153	5.1	.779	50.1	5.4	.795	46.5	6.1	.806	44.1	7.2	.816	41.9	7.5	.829	39.2	3.7	.845	36.0	41	5.9	.854	34.2	48	25
154	6.5	.774	51.3	5.7	.791	47.4	6.3	.808	43.6	6.4	.822	40.6	6.5	.835	38.0	6.7	.850	35.0	41	5.3	.861	32.8	50	30
155	6.6	.774	51.3	5.7	.791	47.4	6.4	.806	44.1	6.6	.821	40.9	6.8	.835	38.0	4.3	.856	33.8	42	4.0	.861	32.8	48	30
156	4.5	.778	50.4	5.1	.792	47.2	5.1	.806	44.1	5.9	.820	41.1	6.1	.832	38.6	4.8	.856	33.8	41	6.2	.870	31.1	49	30
157	5.4	.778	50.4	5.1	.792	47.2	6.1	.810	43.2	4.7	.822	40.6	7.1	.835	38.0	2.6	.853	34.4	41	4.3	.854	34.2	46	20
158	6.7	.773	51.6	6.3	.789	47.8	6.2	.805	44.3	6.2	.818	41.5	5.6	.831	38.8	6.0	.851	34.8	40	5.5	.860	33.0	47	30
159	6.3	.777	50.6	4.0	.791	47.4	5.4	.804	44.5	5.5	.817	41.7	5.5	.830	39.0	5.8	.849	35.2	41	5.5	.858	33.4	48	25
160	5.3	.777	50.6	5.0	.794	46.7	6.6	.811	43.0	6.2	.828	39.4	6.3	.840	37.0	4.7	.861	32.8	41	6.7	.868	31.5	49	25
161	5.2	.777	50.6	5.2	.795	46.5	5.9	.811	43.0	5.5	.828	39.4	6.2	.841	36.8	6.2	.856	33.8	40	7.0	.867	31.7	49	25
162	5.7	.771	52.0	5.3	.786	48.5	5.7	.800	45.4	5.9	.815	42.1	6.4	.829	39.2	5.0	.852	34.6	41	5.4	.861	32.8	49	30
163	3.7	.788	48.1	3.7	.802	44.9	4.7	.813	42.6	6.0	.824	40.2	7.9	.838	37.4	2.8	.853	34.4	43	5.1	.858	33.4	48	30
164	7.7	.773	51.6	5.7	.787	48.3	5.5	.803	44.7	5.1	.815	42.1	5.1	.831	38.8	3.9	.844	36.2	41	4.1	.861	32.8	51	35
165	5.5	.782	49.5	4.9	.798	45.8	5.9	.814	42.3	5.8	.828	39.4	5.7	.841	36.8	6.2	.854	34.2	41	6.3	.865	32.1	49	35
166	5.7	.770	52.3	3.5	.789	47.8	4.7	.802	44.9	5.3	.818	41.5	6.7	.833	38.4	2.2	.857	33.6	41	5.3	.862	32.7	49	30
167	5.7	.773	51.6	3.1	.790	47.6	4.7	.804	44.5	4.7	.818	41.5	6.2	.833	38.4	2.1	.857	33.6	42	5.6	.862	32.7	47	30
168	1.5	.789	47.8	2.1	.816	41.9	2.9	.836	37.8	3.5	.842	36.6	7.7	.850	35.0	5.4	.860	33.0	42	6.4	.864	32.3	50	25
169	4.4	.781	49.7	4.3	.800	45.4	4.2	.811	43.0	5.5	.824	40.2	6.1	.835	38.0	4.0	.858	33.4	41	6.5	.864	32.3	48	30
170	4.3	.782	49.5	4.9	.794	46.7	5.6	.807	43.8	6.0	.818	41.5	6.7	.830	39.0	6.4	.851	34.8	41	5.7	.858	33.4	50	30
171	4.6	.769	52.5	4.4	.778	50.4	4.7	.802	44.9	4.6	.818	41.5	5.0	.830	39.0	3.6	.853	34.4	41	5.9	.865	32.1	49	30
172	5.5	.770	52.3	5.0	.788	48.1	5.3	.805	44.3	5.5	.818	41.5	5.2	.830	39.0	4.9	.850	35.0	41	5.7	.858	33.4	48	30
173	5.4	.780	49.9	5.5	.796	46.3	5.4	.812	42.8	5.9	.825	40.0	6.4	.839	37.2	6.5	.859	33.2	42	6.3	.868	31.5	53	25
174	5.4	.775	51.1	5.3	.793	46.9	6.6	.811	43.0	6.2	.825	40.0	6.3	.843	36.4	5.6	.857	33.6	41	6.0	.867	31.7	48	25
175	5.8	.778	50.4	6.3	.792	47.2	5.5	.806	44.1	6.8	.820	41.1	6.3	.833	38.4	6.3	.851	34.8	41	5.4	.860	33.0	49	30
176	3.9	.780	49.9	4.1	.795	46.5	4.7	.813	42.6	5.5	.830	39.0	5.7	.843	36.4	5.9	.861	32.8	42	6.0	.876	30.0	52	30
177	6.2	.775	51.1	4.9	.788	48.1	5.8	.803	44.7	5.9	.817	41.7	5.7	.829	39.2	5.2	.852	34.6	42	6.3	.854	34.2	49	25
178	11.1	.765	53.5	6.0	.782	49.5	4.5	.796	46.3	3.2	.807	43.8	2.8	.821	40.9	----	----	----	----	----	----	----	----	----
179	6.6	.771	52.0	6.2	.787	48.3	6.1	.801	45.2	6.2	.815	42.1	6.6	.825	40.0	5.7	.847	35.6	40	5.5	.854	34.2	47	25
180	5.0	.782	49.5	5.0	.800	45.4	4.8	.815	42.1	5.3	.828	39.4	5.7	.841	36.8	5.3	.856	33.8	42	4.2	.868	31.5	49	30
181	4.5	.778	50.4	4.2	.792	47.2	5.0	.806	44.1	6.3	.819	41.3	6.5	.831	38.8	5.9	.847	35.6	41	8.0	.853	34.4	47	30
182	3.2	.778	50.4	3.1	.788	48.1	5.0	.800	45.4	5.4	.815	42.1	6.9	.825	40.0	6.7	.844	36.2	42	8.0	.853	34.4	49	35
183	4.0	.779	50.1	4.3	.796	46.3	4.9	.813	42.6	5.5	.828	39.4	5.0	.841	36.8	4.0	.866	31.9	44	5.9	.870	31.1	51	30
184	5.5	.781	49.7	5.5	.796	46.3	5.8	.812	42.8	6.5	.825	40.0	6.5	.839	37.2	5.8	.854	34.2	41	6.8	.862	32.7	49	30
185	5.8	.774	51.3	5.7	.793	46.9	6.0	.810	43.2	7.0	.825	40.0	6.9	.839	37.2	6.4	.860	33.0	42	7.9	.868	31.5	50	30
186	5.5	.771	52.0	5.3	.787	48.3	5.8	.805	44.3	4.7	.818	41.5	4.9	.830	39.0	4.5	.846	35.8	41	4.5	.854	34.2	48	25
187	7.4	.778	50.4	6.2	.795	46.5	7.3	.808	43.6	5.9	.823	40.4	6.2	.834	38.2	4.5	.856	33.8	41	6.2	.860	33.0	47	30
188	5.2	.773	51.6	5.1	.789	47.8	5.3	.804	44.5	6.3	.818	41.5	6.2	.831	38.8	5.0	.859	33.2	42	4.7	.866	31.9	49	35
189	6.0	.770	52.3	5.3	.787	48.3	5.6	.800	45.4	5.5	.817	41.7	7.0	.832	38.6	4.0	.851	34.8	40	5.2	.861	32.8	45	35
190	6.3	.762	54.2	6.2	.778	50.4	6.1	.794	46.7	6.2	.809	43.4	6.8	.822	40.6	5.0	.850	35.0	41	5.8	.855	34.0	57	30
191	4.8	.791	47.4	4.4	.807	43.8	5.5	.821	40.9	5.7	.831	38.8	7.3	.843	36.4	6.4	.864	32.3	41	7.5	.871	31.0	51	30
192	3.7	.780	49.9	3.6	.800	45.4	4.5	.819	41.3	4.0	.833	38.4	4.5	.845	36.0	5.9	.856	33.8	42	5.3	.875	30.2	52	25
193	6.7	.777	50.6	6.0	.791	47.4	6.2	.806	44.1	5.8	.820	41.1	5.5	.834	38.2	5.1	.853	34.4	40	5.0	.861	32.8	45	35

[11] Pour point below 5° F.   [12] Combined with the next heavier fraction.   [16] Below 30.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Distillation at atmospheric pressure—Continued															Distillation at reduced pressure (40 mm.)									
	Fraction, 150° to 175° C. (302° to 347° F.)			Fraction, 175° to 200° C. (347° to 392° F.)			Fraction, 200° to 225° C. (392° to 437° F.)			Fraction, 225° to 250° C. (437° to 482° F.)			Fraction, 250° to 275° C. (482° to 527° F.)			Fraction, up to 200° C. (up to 392° F.)				Fraction, 200° to 225° C. (392° to 437° F.)				
	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (Saybolt seconds)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (Saybolt seconds)	Cloud point (° F.)
36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Oklahoma—Con.																								
194	6.1	0.778	50.4	6.0	0.797	46.0	6.4	0.809	43.4	6.2	0.824	40.2	6.2	0.837	37.6	4.1	0.847	35.6	39	6.4	0.856	33.8	45	45
195	6.9	.774	51.3	6.3	.791	47.4	5.7	.807	43.8	6.1	.819	41.3	6.9	.830	39.0	5.3	.854	34.2	41	5.9	.861	32.8	47	40
196	4.0	.777	50.6	4.7	.791	47.4	5.4	.807	43.8	5.8	.820	41.1	6.3	.832	38.6	4.9	.847	35.6	41	6.2	.856	33.8	49	25
197	5.8	.768	52.7	5.2	.783	49.2	5.3	.797	46.0	5.9	.812	42.8	6.5	.828	39.4	5.2	.854	34.2	41	5.7	.866	31.9	47	30
198	6.9	.778	50.4	6.4	.797	46.0	6.4	.812	42.8	6.5	.825	40.0	7.0	.843	36.4	5.0	.864	32.3	42	5.5	.865	32.1	48	45
199	4.2	.771	52.0	3.9	.789	47.8	4.6	.806	44.1	5.2	.823	40.4	5.8	.837	37.6	4.3	.852	34.6	40	6.7	.862	32.7	48	30
200	3.8	.788	48.1	2.2	.807	43.8	3.8	.822	40.6	3.7	.832	38.6	10.5	.858	33.4	1.1	.862	32.7	40	4.9	.872	30.8	50	30
201	4.2	.782	49.5	4.5	.797	46.0	4.9	.814	42.3	5.6	.828	39.4	5.5	.841	36.8	5.6	.857	33.6	41	7.4	.866	31.9	49	30
Pennsylvania																								
202	4.9	.759	54.9	4.6	.768	52.7	5.1	.779	50.1	5.3	.794	46.7	6.4	.800	45.4	4.9	.826	39.8	40	6.5	.830	39.0	45	45
203	7.9	.757	55.4	6.5	.769	52.5	6.6	.780	49.9	6.4	.791	47.4	7.2	.805	44.3	4.2	.828	39.4	39	5.4	.834	38.2	45	35
204	5.9	.770	52.3	5.9	.782	49.5	5.8	.791	47.4	6.5	.805	44.3	6.4	.811	43.0	4.0	.831	38.8	(16)	6.2	.836	37.8	32	50
205	6.4	.765	53.5	5.3	.778	50.4	6.4	.792	47.2	6.0	.797	46.0	7.5	.815	42.1	4.2	.830	39.0	(16)	5.5	.838	37.4	34	45
206	6.1	.769	52.5	5.2	.778	50.4	5.9	.790	47.6	5.7	.802	44.9	6.2	.813	42.6	3.2	.838	37.4	39	6.2	.840	37.0	44	35
207	4.9	.774	51.3	4.7	.786	48.5	4.5	.795	46.5	5.8	.803	44.7	7.0	.816	41.9	5.1	.823	40.4	(16)	5.8	.829	39.2	33	40
208	5.0	.783	49.2	3.6	.796	46.3	3.9	.801	45.2	4.9	.808	43.6	7.6	.818	41.5	5.5	.826	39.8	(16)	7.0	.828	39.4	35	30
209	3.1	.819	41.3	3.0	.833	38.4	3.6	.839	37.2	4.5	.841	36.8	7.0	.844	36.2	4.7	.849	35.2	(16)	9.0	.850	35.0	42	(11)
Texas																								
210	4.5	.770	52.3	3.2	.787	48.3	3.7	.799	45.6	4.3	.813	42.6	6.0	.828	39.4	2.9	.844	36.2	39	4.7	.850	35.0	45	45
211	6.2	.786	48.6	4.5	.804	44.5	5.5	.825	40.0	5.4	.845	36.0	7.6	.863	32.5	4.1	.883	28.8	44	5.2	.886	28.2	53	(11)
212	3.2	.813	42.6	5.0	.839	37.2	4.5	.852	34.6	8.2	.872	30.8	9.8	.888	27.9	6.1	.907	24.5	45	7.7	.910	24.0	53	(11)
213	----	----	----	2.0	(12)	(12)	3.8	.860	33.0	6.1	.882	28.9	9.9	.898	26.1	5.0	.926	21.3	57	8.7	.934	20.0	74	(11)
214	3.4	.800	45.4	4.1	.818	41.5	3.7	.832	38.6	7.1	.859	33.2	8.6	.875	30.2	6.9	.896	26.4	49	6.5	.900	25.7	63	(11)
215	6.0	.778	50.4	6.2	.793	46.9	5.9	.807	43.8	6.5	.822	40.6	6.4	.835	38.0	4.7	.858	33.4	41	6.7	.862	32.7	46	25
216	4.8	.773	51.6	4.5	.789	47.8	4.7	.806	44.1	6.5	.821	40.9	5.3	.835	38.0	6.4	.855	34.0	40	6.1	.870	31.1	48	25

217	6.3	.773	51.6	5.9	.790	47.6	5.6	.805	44.3	5.7	.820	41.1	5.7	.834	38.2	5.9	.854	34.2	40	4.9	.861	32.8	48	30
218	6.0	.775	51.1	6.1	.790	47.6	6.2	.806	44.1	6.7	.821	40.9	6.2	.833	38.4	5.1	.839	37.2	42	6.7	.848	35.4	47	30
219	8.2	.751	56.9	9.6	.766	53.2	10.8	.778	50.4	10.4	.793	46.9	10.5	.808	43.6	7.6	.830	39.0	39	6.0	.835	38.0	45	40
220	5.8	.782	49.5	6.1	.797	46.0	5.7	.812	42.8	5.9	.824	40.2	6.8	.836	37.8	4.1	.849	35.2	40	6.4	.858	33.4	44	25
221	6.6	.760	54.7	5.9	.777	50.6	6.1	.794	46.7	7.1	.808	43.6	7.9	.826	39.8	3.9	.852	34.6	43	6.5	.854	34.2	48	30
222	3.7	.788	48.1	4.3	.812	42.8	5.3	.825	40.0	5.7	.839	37.2	6.7	.848	35.4	6.8	.863	32.5	44	8.6	.866	31.9	52	35
223	-----	-----	-----	3.0	.849	35.2	6.8	.869	31.3	9.2	.883	28.8	11.9	.895	26.6	9.1	.913	23.5	48	9.5	.923	21.8	65	(11)
224	-----	-----	-----	5.8	.818	41.5	5.2	.861	32.8	8.7	.878	29.7	11.8	.891	27.3	9.6	.913	23.5	50	8.1	.925	21.5	67	(11)
225	6.1	.774	51.3	6.6	.789	47.8	6.1	.804	44.5	6.9	.817	41.7	6.4	.830	39.0	7.8	.850	35.0	40	6.2	.861	32.8	49	25
226	6.0	.786	48.5	5.5	.801	45.2	5.3	.815	42.1	6.2	.825	40.0	5.7	.832	38.6	2.9	.838	37.4	40	3.8	.856	33.8	48	30
227	5.6	.770	52.3	4.8	.778	50.4	5.4	.800	45.4	4.9	.812	42.8	6.2	.832	38.6	5.0	.854	34.2	41	5.0	.864	32.3	48	35
228	5.7	.773	51.6	5.2	.790	47.6	5.0	.803	44.7	5.4	.819	41.3	5.6	.833	38.4	5.5	.846	35.8	40	5.7	.861	32.8	49	30
229	.3	(12)	(12)	1.9	(12)	(12)	3.1	.861	32.8	7.8	.880	29.3	10.4	.891	27.3	8.8	.910	24.0	49	9.3	.920	22.8	68	(11)
230	.9	(12)	(12)	2.6	.841	36.8	5.0	.861	32.8	8.8	.877	29.9	11.7	.890	27.5	11.5	.912	23.7	48	8.8	.919	22.5	69	(11)
231	1.5	(12)	(12)	3.5	.833	38.4	5.1	.859	33.2	9.4	.872	30.8	11.7	.886	28.2	8.5	.908	24.3	45	9.1	.911	23.8	63	(11)
232	2.7	(12)	(12)	3.7	.831	38.8	6.6	.851	34.8	11.0	.867	31.7	16.3	.880	29.3	10.3	.898	26.1	42	9.0	.902	25.4	55	(11)
233	5.6	.771	52.0	5.4	.787	48.3	4.9	.803	44.7	5.6	.818	41.5	5.8	.833	38.4	5.2	.853	34.4	40	5.8	.863	32.5	47	30
234	4.3	.791	47.4	5.6	.810	43.2	4.1	.829	39.2	6.9	.845	36.0	8.9	.862	32.7	7.5	.881	29.1	44	6.6	.891	27.3	57	25
235	2.1	(12)	(12)	1.7	.800	45.4	3.2	.840	37.0	6.5	.864	32.3	6.8	.880	29.3	7.3	.898	26.1	46	6.1	.907	24.5	62	(11)
236	-----	-----	-----	1.3	(12)	(12)	3.5	.858	33.4	6.0	.880	29.3	9.2	.890	27.5	10.3	.912	23.7	51	9.7	.929	20.8	74	(11)
237	.9	(12)	(12)	2.3	.823	40.4	4.0	.855	34.0	6.6	.872	30.8	9.6	.887	28.0	7.2	.912	23.7	48	8.4	.922	22.0	62	(11)
238	6.7	.780	49.9	5.2	.794	46.7	5.5	.808	43.6	6.9	.821	40.9	6.1	.835	38.0	5.4	.847	35.6	40	5.1	.856	33.8	46	30
239	7.6	.775	51.1	6.0	.795	46.5	6.0	.807	43.8	6.6	.821	40.9	7.0	.835	38.0	4.8	.850	35.0	43	5.9	.867	31.7	49	30
240	6.1	.774	51.3	5.7	.791	47.4	5.9	.808	43.6	5.9	.821	40.9	6.3	.834	38.2	4.4	.856	33.8	40	6.0	.863	32.5	48	30
241	5.6	.772	51.8	4.9	.790	47.6	5.1	.806	44.1	5.4	.819	41.3	5.6	.832	38.6	4.1	.853	34.4	40	5.3	.861	32.8	47	30
242	1.4	.778	50.4	1.9	.791	47.4	3.7	.812	42.8	6.0	.824	40.2	8.7	.833	38.4	6.9	.844	36.2	40	10.7	.848	35.4	45	40
243	13.9	.789	47.8	9.1	.797	46.0	9.3	.809	43.4	10.2	.835	38.0	10.3	.855	34.0	-----	-----	-----	-----	-----	-----	-----	-----	-----
244	4.7	.769	52.5	5.8	.779	50.1	8.5	.792	47.2	9.8	.806	44.1	10.1	.821	40.9	8.7	.841	36.8	40	8.6	.849	35.2	46	35
245	-----	-----	-----	3.7	.856	33.8	8.0	.874	30.4	10.7	.889	27.7	19.2	.904	25.0	10.7	.915	23.1	47	9.7	.923	21.8	60	(11)
246	6.3	.772	51.8	5.2	.786	48.5	5.5	.800	45.4	5.8	.816	41.9	5.9	.830	39.0	6.6	.851	34.8	40	5.0	.859	33.2	47	30
247	-----	-----	-----	-----	-----	-----	3.0	.845	36.0	3.6	.868	31.5	7.2	.876	30.0	5.5	.889	27.7	46	10.0	.895	26.6	57	(11)
248	4.8	.815	42.1	5.5	.837	37.6	6.8	.855	34.0	11.6	.882	28.9	13.4	.896	26.4	9.3	.922	22.0	45	7.4	.928	21.0	57	(11)
249	6.6	.774	51.3	5.4	.790	47.6	5.9	.806	44.1	6.3	.818	41.5	5.7	.829	39.2	5.5	.846	35.8	39	6.0	.852	34.6	45	30
250	-----	-----	-----	-----	-----	-----	7.7	.845	36.0	6.8	.867	31.7	10.0	.878	29.7	6.6	.894	26.8	45	9.4	.900	25.7	56	35
251	3.7	.776	50.9	3.7	.790	47.6	4.3	.802	44.9	4.9	.812	42.8	6.9	.821	40.9	3.1	.836	37.8	40	5.3	.845	36.0	46	45
252	6.5	.774	51.3	6.1	.790	47.6	6.4	.805	44.3	6.1	.819	41.3	6.2	.831	38.8	4.6	.850	35.0	40	6.3	.860	33.0	48	30
253	2.0	(12)	(12)	2.5	.829	39.2	5.5	.864	32.3	6.5	.878	29.7	10.1	.890	27.5	10.3	.918	22.6	46	8.7	.926	21.3	56	(11)
254	-----	-----	-----	1.2	(12)	(12)	2.9	.854	34.2	10.0	.861	32.8	16.5	.876	30.0	6.7	.894	26.8	50	9.4	.914	23.3	79	(11)
255	6.2	.778	50.4	5.7	.792	47.2	5.8	.805	44.3	5.8	.818	41.5	6.5	.828	39.4	3.1	.839	37.2	41	5.6	.847	35.6	45	30
256	3.5	.789	47.8	6.2	.807	43.8	6.4	.821	40.9	7.3	.837	37.6	9.3	.852	34.6	4.1	.875	30.2	42	8.3	.880	29.3	49	(11)
257	4.9	.765	53.5	5.9	.780	49.9	6.7	.795	46.5	6.1	.812	42.8	7.8	.826	39.8	5.1	.853	34.4	44	6.6	.858	33.4	51	35
258	6.1	.779	50.1	5.7	.793	46.9	6.4	.808	43.6	6.7	.822	40.6	6.6	.833	38.4	5.1	.853	34.4	41	7.0	.862	32.7	71	30
259	8.8	.749	57.4	7.9	.766	53.2	7.8	.782	49.5	8.6	.797	46.0	7.7	.815	42.1	6.0	.837	37.6	39	6.3	.848	35.4	46	35
260	6.3	.759	54.9	6.1	.775	51.1	6.8	.790	47.6	7.5	.809	43.4	8.1	.826	39.8	5.3	.846	35.8	42	7.3	.853	34.4	49	30
261	3.1	.790	47.6	3.4	.806	44.1	4.4	.819	41.3	6.5	.829	39.2	7.7	.834	38.2	7.9	.848	35.4	40	8.4	.856	33.8	47	30
262	-----	-----	-----	.5	(12)	(12)	2.5	.834	38.2	4.4	.881	29.1	8.0	.897	26.3	4.5	.920	22.3	53	7.4	.931	20.5	77	(11)
263	-----	-----	-----	1.9	.842	36.6	5.5	.860	33.0	11.4	.880	29.3	16.8	.895	26.6	4.1	.905	24.9	43	14.2	.917	22.8	57	(11)
264	7.3	.769	52.5	7.3	.784	49.0	6.1	.798	45.8	6.3	.812	42.8	5.9	.825	40.0	6.5	.850	35.0	40	4.6	.859	33.2	51	3
265	5.9	.775	51.1	5.5	.793	46.9	5.3	.810	43.2	5.4	.825	40.0	5.8	.839	37.2	5.1	.860	33.0	40	5.7	.872	30.8	48	35
266	3.3	.788	48.1	3.9	.813	42.6	5.9	.838	37.4	7.3	.860	33.0	10.0	.879	29.5	7.6	.900	25.7	44	6.2	.913	23.5	56	(11) 0

[11] Pour point below 5° F. [12] Combined with the next heavier fraction. [16] Below 30.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Distillation at atmospheric pressure—Continued															Distillation at reduced pressure (40 mm.)								
	Fraction, 150° to 175° C. (302° to 347° F.)			Fraction, 175° to 200° C. (347° to 392° F.)			Fraction, 200° to 225° C. (392° to 437° F.)			Fraction, 225° to 250° C. (437° to 482° F.)			Fraction, 250° to 275° C. (482° to 527° F.)			Fraction, up to 200° C. (up to 392° F.)				Fraction, 200° to 225° C. (392° to 437° F.)				
	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (Saybolt seconds)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (Saybolt seconds)	Cloud point (° F.)
36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Texas—Con.																								
267	6.1	0.775	51.1	6.0	0.791	47.4	6.1	0.807	43.8	6.6	0.820	41.1	6.5	0.831	38.8	4.8	0.847	35.6	40	5.6	0.856	33.8	44	20
268	5.7	.777	50.6	5.6	.792	47.2	5.6	.808	43.6	5.7	.821	40.9	6.1	.833	38.4	5.2	.844	36.2	40	5.2	.853	34.4	46	25
269	6.3	.780	49.9	4.6	.800	45.4	7.1	.815	42.1	3.0	.825	40.0	6.0	.842	36.6	3.8	.859	33.2	40	4.4	.866	31.9	47	30
270	4.5	.782	49.5	5.0	.794	46.7	5.4	.810	43.2	6.1	.825	40.0	5.9	.838	37.4	2.7	.854	34.2	40	7.4	.862	32.7	45	30
271	----	----	----	1.5	(12)	(12)	2.2	.838	37.4	6.9	.869	31.3	11.8	.886	28.2	8.6	.908	24.3	47	11.3	.918	22.6	64	(11)
272	6.2	.775	51.1	5.8	.790	47.6	6.5	.805	44.3	7.0	.819	41.3	6.7	.832	38.6	4.4	.854	34.2	40	7.3	.859	33.2	46	25
273	----	----	----	1.1	(12)	(12)	2.9	.853	34.4	7.7	.872	30.8	9.3	.885	28.4	8.8	.900	25.7	46	8.7	.910	24.0	70	(11)
274	6.4	.771	52.0	5.8	.787	48.3	5.7	.803	44.7	6.0	.819	41.3	5.5	.831	38.8	5.3	.852	34.6	40	4.9	.865	32.1	47	30
275	7.3	.775	51.1	5.4	.800	45.4	5.7	.815	42.1	6.1	.840	37.0	6.9	.852	34.6	4.5	.854	34.2	40	4.7	.864	32.3	45	40
276	7.0	.772	51.8	6.1	.784	49.0	6.2	.795	46.5	7.4	.809	43.4	7.2	.821	40.9	5.3	.839	37.2	40	6.9	.854	34.2	47	40
277	----	----	----	1.5	.835	38.0	3.3	.857	33.6	6.9	.876	30.0	9.9	.891	27.3	7.0	.914	23.3	46	10.4	.924	21.6	57	(11)
278	1.4	.792	47.2	2.7	.835	38.0	5.5	.858	33.4	9.9	.876	30.0	17.0	.900	25.7	8.8	.911	23.8	44	10.2	.914	23.3	56	(11)
279	6.1	.778	50.4	5.7	.793	46.9	6.0	.811	43.0	7.1	.823	40.4	5.6	.837	37.6	4.8	.857	33.6	40	5.5	.860	33.0	46	20
280	5.3	.770	52.3	5.2	.786	48.5	4.8	.806	44.1	6.0	.820	41.1	6.5	.836	37.8	3.7	.857	33.6	44	6.0	.860	33.0	48	30
Utah																								
281	4.6	.779	50.1	5.1	.794	46.7	5.2	.808	43.6	5.6	.822	40.6	6.6	.834	38.2	4.2	.843	36.4	40	5.4	.852	34.6	46	40
West Virginia																								
282	6.5	.760	54.7	5.8	.772	51.8	5.6	.783	49.2	6.0	.795	46.5	6.4	.810	43.2	4.6	.828	39.4	(16)	4.6	.830	39.0	33	45
283	7.6	.761	54.4	6.9	.773	51.6	6.3	.783	49.2	7.0	.798	45.8	7.7	.809	43.4	3.3	.825	40.0	(16)	4.7	.829	39.2	38	45
284	6.7	.762	54.2	5.7	.775	51.1	5.7	.785	48.8	6.3	.796	46.3	6.4	.811	43.0	5.0	.826	39.8	35	4.9	.833	38.4	40	45

Wyoming																							
285	4.1	.777	50.6	4.2	.795	46.5	3.9	.813	42.6	4.3	.825	40.0	6.0	.838	37.4	3.7	.861	32.8	40	6.0	.866	31.9	50	25
286	4.6	.769	52.5	4.0	.785	48.8	4.5	.808	43.6	5.3	.821	40.9	6.9	.836	37.8	4.5	.848	35.4	39	6.4	.857	33.6	44	30
287	1.8	.772	51.8	1.9	.797	46.0	2.5	.817	41.7	3.9	.841	36.8	5.9	.864	32.3	2.9	.894	26.8	41	5.4	.912	23.7	52	10
288	3.3	.761	54.4	3.1	.783	49.2	3.9	.800	45.4	5.6	.819	41.3	6.9	.841	36.8	3.4	.871	31.0	42	6.6	.877	29.9	56	20
289	2.8	.785	48.8	2.8	.802	44.9	3.8	.816	41.9	4.9	.825	40.0	5.8	.835	38.0	4.6	.869	31.3	42	6.2	.876	30.0	48	20
290	1.8	.761	54.4	2.9	.781	49.7	4.1	.800	45.4	4.9	.819	41.3	6.3	.837	37.6	3.7	.862	32.7	45	6.3	.869	31.3	50	15
291	6.1	.784	49.0	5.7	.799	45.6	5.1	.814	42.3	4.7	.829	39.2	6.2	.838	37.4	4.0	.862	32.7	39	4.5	.863	32.5	44	50
292	6.1	.782	49.5	5.9	.795	46.5	5.7	.812	42.8	5.8	.825	40.0	6.9	.836	37.8	4.5	.858	33.4	39	5.1	.859	33.2	45	50
293	8.2	.782	49.5	5.8	.796	46.3	4.9	.808	43.6	5.2	.824	40.2	4.9	.844	36.2	3.5	.865	32.1	39	3.5	.870	31.1	45	40
294	5.3	.778	50.4	4.1	.794	46.7	4.0	.809	43.4	5.0	.820	41.1	6.4	.829	39.2	4.5	.839	37.2	40	5.4	.843	36.4	45	45
295	5.7	.781	49.7	6.7	.795	46.5	7.5	.807	43.8	5.8	.822	40.6	6.7	.834	38.2	4.9	.850	35.0	40	5.0	.850	35.0	45	40
296	3.4	.769	52.5	3.4	.790	47.6	3.8	.809	43.4	4.5	.825	40.0	6.6	.845	36.0	3.2	.869	31.3	40	5.6	.881	29.1	46	20
297	6.5	.779	50.1	5.5	.792	47.2	5.5	.807	43.8	6.1	.820	41.1	7.1	.832	38.6	4.1	.854	34.2	40	5.5	.857	33.6	47	40
298	5.7	.767	53.0	5.5	.779	50.1	5.6	.794	46.7	6.3	.805	44.3	5.9	.818	41.5	4.3	.828	39.4	39	6.7	.831	38.8	44	65
299	3.7	.768	52.7	4.4	.787	48.3	4.2	.804	44.5	5.1	.822	40.6	7.2	.840	37.0	4.7	.864	32.3	39	5.8	.880	29.3	47	25
300	3.4	.767	53.0	3.3	.785	48.8	3.8	.804	44.5	4.3	.820	41.1	6.3	.842	36.6	4.7	.864	32.3	39	5.9	.881	29.1	46	20
301	6.4	.768	52.7	5.3	.782	49.5	5.3	.793	46.9	5.9	.800	45.4	7.3	.815	42.1	4.7	.840	37.0	39	6.3	.840	37.0	44	40
302	5.8	.782	49.5	5.5	.795	46.5	6.1	.810	43.2	7.3	.821	40.9	8.8	.831	38.8	6.2	.845	36.0	39	7.9	.849	35.2	44	20
303	7.5	.768	52.7	5.6	.780	49.9	5.7	.792	47.2	7.4	.804	44.5	8.6	.816	41.9	5.1	.839	37.2	39	7.5	.842	36.6	44	40
304	2.5	.768	52.7	3.5	.788	48.1	4.4	.809	43.4	5.7	.821	40.9	5.9	.840	37.0	4.0	.864	32.3	41	7.1	.872	30.8	47	30
305	4.0	.819	41.3	3.7	.835	38.0	4.7	.841	36.8	6.1	.851	34.8	8.6	.856	33.8	6.9	.860	33.0	39	9.9	.860	33.0	46	50
306	2.6	.758	55.2	3.3	.783	49.2	3.9	.803	44.7	5.1	.822	40.6	5.7	.839	37.2	3.7	.861	32.8	40	7.2	.873	30.6	47	35
307	3.5	.767	53.0	4.3	.789	47.8	4.2	.805	44.3	5.6	.819	41.3	7.6	.831	38.8	5.1	.848	35.4	41	8.0	.852	34.6	48	45
308	6.0	.783	49.2	4.7	.798	45.8	5.3	.812	42.8	5.8	.825	40.0	6.3	.838	37.4	4.3	.855	34.0	40	6.0	.857	33.6	45	35
309	5.4	.785	48.8	4.4	.801	45.2	5.1	.815	42.1	5.3	.828	39.4	6.7	.839	37.2	3.8	.857	33.6	39	5.7	.861	32.8	43	35
310	6.3	.774	51.3	5.6	.789	47.8	6.3	.803	44.7	6.5	.815	42.1	6.9	.825	40.0	5.4	.844	36.2	41	7.8	.848	35.4	47	10
311	6.4	.785	48.8	5.9	.802	44.9	6.7	.816	41.9	7.7	.825	40.0	8.2	.835	38.0	7.2	.851	34.8	40	9.1	.853	34.4	46	35
312	1.7	.769	52.5	3.1	.794	46.7	2.9	.819	41.3	3.5	.847	35.6	6.5	.867	31.7	4.9	.897	26.3	41	5.1	.913	23.5	52	(11)
313	2.4	.781	49.7	3.0	.799	45.6	3.6	.814	42.3	4.7	.833	38.4	6.6	.855	34.0	4.2	.875	30.2	39	6.3	.883	28.8	46	30
314	5.3	.783	49.2	4.3	.800	45.4	4.4	.813	42.6	4.3	.825	40.0	5.5	.837	37.6	4.5	.851	34.8	38	5.5	.857	33.6	47	35
315	5.5	.785	48.8	4.1	.798	45.8	4.6	.810	43.2	5.3	.823	40.4	5.8	.836	37.8	4.9	.844	36.2	41	5.9	.849	35.2	46	40
316	5.1	.797	46.0	4.2	.807	43.8	4.7	.821	40.9	5.9	.833	38.4	6.0	.841	36.8	4.1	.856	33.8	42	5.8	.856	33.8	49	35
317	1.4	.826	39.8	1.7	.848	35.4	2.7	.859	33.2	3.3	.867	31.7	5.1	.871	31.0	4.9	.884	28.6	43	9.7	.889	27.7	53	(11)
318	4.2	.794	46.7	4.1	.812	42.8	4.0	.825	40.0	4.5	.837	37.6	6.4	.848	35.4	5.7	.857	33.6	40	5.4	.861	32.8	46	40
319	1.6	.784	49.0	1.5	.801	45.2	2.9	.818	41.5	3.6	.829	39.2	4.8	.845	36.0	2.0	.874	30.4	41	5.8	.884	28.6	47	30

[11] Pour point below 5° F

[12] Combined with the next heavier fraction.

[13] Below 30.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Distillation at reduced pressure (40 mm.)[14]—Continued: Fraction, 225° to 250° C. (437° to 482° F.)					Fraction, 250° to 275° C. (482° to 527° F.)					Fraction, 275° to 300° C. (527° to 572° F.)					Summary[17]: Gasoline, light ends			Total, gasoline and naphtha			Kerosene distillate		
	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)[8]	Cloud point (°F.)[9]	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)[8]	Cloud point (°F.)[9]	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)[8]	Cloud point (°F.)[9]	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
Alaska																								
1	5.3	0.866	31.9	64	70	3.4	0.876	30.0	98	85	3.3	0.897	26.3	170	95	15.1	0.697	71.5	45.8	0.742	59.2	11.4	0.819	41.3
Arkansas																								
2	5.5	.873	30.6	58	50	5.3	.888	27.9	78	65	5.6	.908	24.3	170	85	7.4	.692	73.0	28.8	.736	60.8	7.7	.817	41.7
3	6.7	.913	23.5	80	(11)	5.1	.928	21.0	120	(11)	7.3	.934	20.0	240	(11)	1.7	------	------	11.5	.784	49.0	------	------	------
4	7.1	.913	23.5	79	(11)	6.1	.925	21.5	150	(11)	8.8	.931	20.5	230	(11)	------	------	------	------	------	------	------	------	------
5	6.6	.902	25.4	100	(15)	5.8	.914	23.3	180	(15)	7.2	.919	22.5	250	(15)	------	------	------	------	------	------	------	------	------
6	6.1	.915	23.1	66	(11)	6.2	.923	21.8	110	(11)	7.9	.936	19.7	230	(11)	------	------	------	7.3	.778	50.4	------	------	------
7	5.7	.899	25.9	67	40	5.8	.912	23.7	100	45	6.4	.920	22.3	160	65	2.0	.720	65.0	13.9	.765	53.5	3.5	.824	40.2
8	6.3	.889	27.7	61	35	6.0	.903	25.2	92	55	5.9	.909	24.2	160	75	2.0	.703	69.8	13.4	.751	56.9	8.6	.816	41.9
9	6.5	.913	23.5	72	(11)	5.6	.921	22.1	120	(11)	7.5	.925	21.5	190	(11)	------	------	------	5.5	.789	47.8	------	------	------
10	6.4	.909	24.2	64	(11)	6.0	.921	22.1	110	(11)	6.8	.929	20.8	220	(11)	4.2	------	------	7.1	.786	48.5	------	------	------
California																								
11	4.9	.931	20.5	120	(11)	5.3	.948	17.8	400	(11)	6.8	.958	16.2	[18] 57	(11)	------	------	------	5.3	.805	44.3	------	------	------
12	4.7	.889	27.7	63	55	5.5	.903	25.2	100	70	6.5	.916	23.0	190	90	4.8	.712	67.2	26.8	.762	54.2	5.1	.817	41.7
13	6.6	.936	19.7	140	(11)	4.8	.950	17.5	400	(11)	5.3	.954	16.8	[18] 56	(11)	3.2	.734	61.3	23.8	.776	50.9	------	------	------
14	5.4	.943	18.6	100	(11)	5.4	.956	16.5	300	(11)	11.2	.967	14.8	(19)	(11)	------	------	------	6.6	.805	44.3	------	------	------
15	4.3	.919	22.5	77	(11)	3.9	.932	20.3	190	(11)	5.4	.942	18.7	(19)	(11)	8.9	.701	70.4	36.0	.761	54.4	------	------	------
16	4.8	.920	22.3	100	(11)	4.6	.934	20.0	180	(11)	6.1	.942	18.7	(19)	(11)	4.7	.716	66.1	28.0	.778	50.4	------	------	------
17	5.7	.944	18.4	130	(15)	4.0	.962	15.6	150	(15)	7.5	.974	13.8	400	(15)	------	------	------	------	------	------	------	------	------
18	2.5	.925	21.5	83	(15)	6.1	.931	20.5	130	(15)	7.6	.943	18.6	340	(15)	------	------	------	9.8	.781	49.7	------	------	------
19	7.2	.883	28.8	55	50	4.7	.903	25.2	89	80	6.3	.911	23.8	180	90	1.8	.720	65.0	19.8	.775	51.1	------	------	------
20	7.8	.922	22.0	69	(11)	5.7	.936	19.7	170	(11)	8.2	.946	18.1	(19)	(11)	1.0	------	------	9.2	.782	49.5	------	------	------
21	7.2	.910	24.0	71	50	5.8	.924	21.6	125	60	7.8	.934	20.0	295	70	1.8	.708	68.4	14.7	.782	49.5	------	------	------
22	5.3	.926	21.3	81	(11)	9.4	.936	19.7	130	(11)	6.1	.948	17.8	(19)	(11)	------	------	------	6.8	.804	44.5	------	------	------

23	2.3	.933	20.2	65	70											9.8	.725	63.7	53.0	.788	48.1			
24	9.1	.923	21.8	82	(11)	7.5	.941	18.9	170	(11)	5.7	.955	16.7	(19)	(11)	.4			2.2	.808	43.6			
25	8.7	.929	20.8	140	(11)	7.9	.945	18.2	(19)	(11)	11.6	.954	16.8	[18] 61	(11)									
26	5.2	.888	27.9	67	50	4.3	.901	25.6	115	70	7.9	.915	23.1	240	85	3.7	.713	67.0	20.5	.764	53.7	4.7	.819	41.3
27	4.4	.886	28.2	65	50	4.0	.900	25.7	110	70	5.2	.911	23.8	230	80	10.2	.721	64.8	34.5	.762	54.2	5.0	.824	40.2
28	5.4	.922	22.0	90	(11)	5.5	.930	20.7	165	(11)	6.4	.942	18.7	(19)	(11)	1.1	.759	54.9	12.3	.781	49.7			
29	4.9	.916	23.0	80	(11)	5.3	.929	20.8	170	(11)	6.1	.941	18.9	(19)	(11)	2.3	.740	59.7	24.0	.786	48.5			
30	6.5	.929	20.8	96	(11)	7.7	.938	19.4	220	(11)	4.7	.950	17.5	(19)	(11)									
31	2.8	.891	27.3	70	40	3.0	.909	24.2	125	60	4.4	.931	20.5	(19)	75	16.4	.710	67.8	60.4	.751	56.9	6.1	.817	41.7
32	4.9	.886	28.2	74	43	4.6	.904	25.0	120	60	5.9	.916	23.0	255	75	3.8	.677	77.5	18.4	.750	57.2	3.7	.817	41.7
33	5.3	.919	22.5	77	(11)	5.3	.934	20.0	150	(11)	7.4	.944	18.4	395	(11)				2.1	.806	44.1			
34	4.7	.892	27.1	68	50	5.0	.910	24.0	130	60	6.5	.920	22.3	260	80	6.0	.722	64.5	25.0	.764	53.7	3.5	.825	40.0
35	6.5	.937	19.5	125	(11)	5.7	.950	17.5	300	(11)	9.0	.956	16.5	[18] 57	(11)									
36	5.5	.889	27.7	65	50	4.7	.904	25.0	110	70	5.9	.918	22.6	230	90	7.9	.716	66.1	29.3	.757	55.4	4.4	.818	41.5
37	5.2	.902	25.4	72	40	5.1	.919	22.5	170	50	7.2	.931	20.5	370	60	3.1	.720	65.0	15.8	.768	52.7			
38	5.1	.900	25.7	74	45	5.5	.916	23.0	165	60	6.5	.928	21.0	275	75	4.6	.718	65.6	20.0	.763	54.0	4.5	.824	40.2
39	5.1	.896	26.4	63	60	3.8	.910	24.0	105	80	5.0	.916	23.0	220	90	14.2	.704	69.5	41.9	.752	56.7	6.1	.821	40.9
40	6.2	.950	17.5	135	(11)	6.0	.958	16.2	340	(11)	5.4	.964	15.3	(19)	(11)				5.1	.798	45.8			
41	5.5	.941	18.9	110	(11)	6.5	.954	16.8	355	(11)	5.5	.960	15.9	(19)	(11)				7.6	.777	50.6			
42	4.2	.923	21.8	105	(11)	5.1	.937	19.5	230	(11)	6.4	.950	17.5	(19)	(11)	4.9	.726	63.4	27.2	.771	52.0			
43	6.3	.937	19.5	130	(11)	5.7	.952	17.1	(19)	(11)	5.7	.961	15.7	[18] 58	(11)	.6	.732	61.8	18.4	.790	47.6			
44	4.9	.899	25.9	80	60	5.3	.912	23.7	135	80	6.3	.923	21.8	300	90	6.2	.726	63.4	23.9	.772	51.8			
45	5.6	.947	17.9	185	(11)	7.6	.959	16.0	(19)	(11)	8.7	.969	14.5	[18] 71	(11)									
46	7.1	.944	18.4	150	(11)	7.8	.959	16.0	(19)	(11)	11.0	.975	13.6	[18] 59	(11)									
47	7.3	.942	18.7	135	(11)	7.5	.963	15.4	(19)	(11)	6.1	.968	14.7	[18] 60	(11)	.3	(12)	(12)	11.1	.796	46.3			
48	4.5	.947	17.9	150	(11)	7.3	.959	16.0	(19)	(11)	9.7	.965	15.1	[18] 68	(11)									
49	6.4	.923	21.8	85	(11)	7.7	.934	20.0	170	(11)	6.9	.943	18.5	400	(11)									
50	6.6	.901	25.6	70	25	7.0	.913	23.5	130	45	9.3	.923	21.8	230	60	.6	(12)	(12)	10.6	.800	45.4			
51	4.1	.912	23.7	95	(11)	4.5	.930	20.7	205	(11)	4.9	.940	19.0	(19)	(11)	4.6	.746	58.2	33.4	.781	49.7			
52	4.5	.908	24.3	85	15	4.3	.922	22.0	185	35	4.7	.933	20.2	(19)	(11)	2.8	.744	58.7	34.5	.785	48.8			
53	5.8	.943	18.6	135	(11)	7.0	.958	16.2	390	(11)	12.6	.966	15.0	[18] 59	(11)									
54	5.8	.931	20.5	120	(11)	6.7	.943	18.6	295	(11)	7.9	.953	17.0	[18] 51	(11)				9.6	.798	45.8			
55	7.3	.933	20.2	100	(11)	6.0	.942	18.7	275	(11)	6.1	.956	16.5	[18] 52	(11)	.3	(12)	(12)	7.1	.787	48.3			
56	6.5	.945	18.2	135	(11)	6.9	.962	15.6	(19)	(11)	8.8	.968	14.7	[18] 61	(11)									
57	4.2	.930	20.7	91	(11)	5.9	.947	17.9	200	(11)	8.0	.957	16.4	(19)	(11)	1.4	(12)	(12)	13.0	.780	49.9			
58	5.9	.901	25.6	73	50	4.3	.911	23.8	125	65	6.8	.923	21.8	230	80	2.1	(12)	(12)	14.7	.785	48.0			
59	5.0	.938	19.4	125	(11)	4.7	.947	17.9	260	(11)	9.0	.957	16.4	[18] 52	(11)				8.3	.793	46.9			
60	5.4	.882	28.9	61	50	4.4	.898	26.1	96	70	5.3	.912	23.7	260	90	8.9	.713	67.0	36.7	.760	54.7	5.3	.819	41.3
61	5.2	.887	28.0	65	45	5.7	.899	25.9	105	65	7.1	.914	23.3	250	90	.9	(12)	(12)	18.8	.788	48.1			
62	4.5	.911	23.8	78	35	4.7	.926	21.3	155	50	4.7	.937	19.5	320	70	3.5	.708	68.4	21.8	.768	52.7			
63	5.4	.920	22.3	82	(11)	5.5	.937	19.5	250	(11)	8.5	.942	18.7	(19)	(11)	.5	(12)	(12)	13.1	.789	47.8			
64	6.4	.943	18.6	97	(11)	8.3	.960	15.9	365	(11)	4.5	.969	14.5	[18] 61	(11)	1.2	(12)	(12)	8.3	.776	50.9			
65	5.1	.893	27.0	66	50	4.6	.907	24.5	130	60	5.5	.921	22.1	280	75	6.9	.706	68.9	32.9	.759	54.9	5.2	.820	41.1

[9] Viscosity reported in seconds (Saybolt Universal viscosimeter) to two significant figures only.
[10] Pour and cloud points reported to nearest even 5° F. (See Tech. Paper 323B, pp. 37–41.)
[11] Pour point below 5° F.
[14] Distillation temperatures taken by A. S. T. M. low-distillation thermometer. (See Bull 207, pp. 19–33 and 37–54, and Table 2, this report.) Not corrected for emergent stem or for barometric pressure. Average laboratory temperature, 25° C. (77° F.); average barometric pressure, 742 mm.
[15] Sample too dark in color to allow determination of cloud point.
[17] See pp. 7 to 10, this report.
[18] Viscosity, Saybolt seconds, taken at 212° F.
[19] Viscosity, Saybolt, at 100° F., above 400 seconds.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Distillation at reduced pressure (40 mm.)—Continued															Summary								
	Fraction, 225° to 250° C. (437° to 482° F.)					Fraction, 250° to 275° C. (482° to 527° F.)					Fraction, 275° to 300° C. (527° to 572° F.)					Gasoline, light ends			Total, gasoline and naphtha			Kerosene distillate		
	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)	Cloud point (°F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)	Cloud point (°F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)	Cloud point (°F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
California—Con.																								
66	4.4	0.886	28.2	65	55	4.5	0.900	25.7	100	75	6.7	0.914	23.3	185	90	6.5	0.693	72.7	25.5	0.753	56.4	4.5	0.817	41.7
67	6.1	.947	17.9	120	(11)	5.0	.961	15.7	245	(11)	8.7	.972	14.1	(19)	(11)	------	------	------	------	------	------	------	------	------
68	4.6	.899	25.9	73	65	5.7	.911	23.8	100	75	6.5	.924	21.6	225	85	2.3	.713	67.0	14.6	.774	51.3	------	------	------
69	4.9	.885	28.4	65	60	4.3	.900	25.7	105	75	6.7	.914	23.3	225	85	9.7	.699	70.9	28.6	.749	57.4	4.4	.820	41.1
70	1.2	.869	31.3	65	60	------	------	------	------	------	------	------	------	------	------	10.8	.704	69.5	64.4	.757	55.4	15.9	.812	42.8
71	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	15.5	.705	69.2	81.1	.754	56.2	5.1	.816	41.9
72	4.6	.915	23.1	90	(11)	4.9	.926	21.3	230	(11)	6.3	.945	18.2	(19)	(11)	4.1	.753	56.4	12.2	.783	49.2	------	------	------
73	6.4	.914	23.3	67	(11)	5.3	.928	21.0	115	(15)	6.0	.942	18.7	325	(15)	.6	(12)	(12)	8.2	.804	44.5	------	------	------
Colorado																								
74	7.6	.866	31.9	64	55	5.7	.877	29.9	89	70	8.3	.892	27.1	160	90	------	------	------	8.9	.758	55.2	14.5	.808	43.6
75	6.8	.864	32.3	55	60	6.5	.871	31.0	78	80	7.1	.883	28.8	125	95	8.2	.690	73.6	26.1	.746	58.2	9.5	.820	41.1
76	5.8	.859	33.2	57	65	5.9	.867	31.7	80	80	5.7	.880	29.3	125	95	5.9	.700	70.6	34.7	.750	57.2	20.5	.810	43.2
Illinois																								
77	5.5	.873	30.6	59	45	5.2	.882	28.9	81	60	6.0	.893	27.0	150	75	2.0	.710	67.8	20.4	.769	52.5	4.5	.821	40.9
Indiana																								
78	5.6	.860	33.0	52	60	5.3	.878	29.7	85	75	6.8	.885	28.4	140	85	4.2	.698	71.2	26.0	.753	56.4	19.2	.817	41.7
Kansas																								
79	6.5	.867	31.7	65	45	6.0	.878	29.7	98	65	6.7	.893	27.0	165	80	------	------	------	16.2	.761	54.4	10.9	.808	43.6
80	6.3	.883	28.8	62	45	5.1	.895	26.6	92	65	5.5	.904	25.0	155	80	1.8	.713	67.0	24.2	.761	54.4	6.3	.814	42.3
81	5.1	.872	30.8	62	50	4.9	.887	28.0	88	65	5.1	.895	26.6	140	80	9.5	.679	76.9	32.8	.736	60.8	9.5	.815	42.1
82	6.7	.879	29.5	63	40	6.2	.890	27.5	92	60	7.8	.900	25.7	170	75	------	------	------	15.9	.768	52.7	11.4	.820	41.1
83	5.9	.883	28.8	63	55	4.9	.894	26.8	93	70	5.0	.908	24.3	155	90	4.2	.706	68.9	29.8	.751	56.9	12.7	.817	41.7
84	6.1	.879	29.5	62	50	5.0	.893	27.0	95	65	5.7	.902	25.4	170	80	3.1	.710	67.8	27.3	.754	56.2	13.2	.814	42.3

85	5.7	.873	30.6	62	50	5.2	.884	28.6	93	60	6.7	.897	26.3	160	80	4.1	.701	70.4	25.9	.753	56.4	12.1	.812	42.8
86	6.6	.881	29.1	67	45	6.1	.894	26.8	110	65	4.7	.904	25.0	180	80	2.5	.709	68.1	20.2	.758	55.2	9.7	.819	41.3
87	6.6	.880	29.3	65	40	5.7	.894	26.8	105	65	6.1	.906	24.7	210	75	3.5	.684	75.4	21.2	.745	58.4	10.4	.815	42.1
88	7.2	.878	29.7	63	45	4.9	.893	27.0	96	70	6.4	.901	25.6	165	75	2.2	.730	62.3	25.1	.761	54.4	5.3	.816	41.9
89	5.5	.878	29.7	70	50	5.3	.888	27.9	105	60	5.5	.900	25.7	180	80	3.5	.730	62.3	25.3	.767	53.0	11.4	.813	42.6
90	7.4	.895	26.6	70	10	8.2	.907	24.5	115	15	6.9	.923	21.8	285	25	------	------	------	------	------	------	2.1	.800	45.4
91	5.7	.869	31.3	62	45	5.4	.882	28.9	96	60	4.4	.894	26.8	155	75	8.5	.686	74.8	29.9	.741	59.5	9.4	.810	43.2
92	5.2	.871	31.0	62	45	4.7	.886	28.2	93	60	5.5	.896	26.4	165	70	6.4	.705	69.2	24.7	.748	57.7	8.6	.816	41.9
93	5.5	.880	29.3	64	45	5.7	.897	26.3	100	55	6.1	.905	24.9	180	75	3.1	.714	66.7	17.1	.753	56.4	10.9	.813	42.6
94	6.6	.874	30.4	64	50	5.1	.883	28.8	94	70	6.3	.896	26.4	155	85	1.0	------	------	25.9	.763	54.0	13.1	.814	42.3
95	6.4	.876	30.0	62	45	6.1	.891	27.3	105	70	4.9	.900	25.7	160	85	2.3	.711	67.5	19.0	.760	54.7	10.4	.816	41.9
96	7.6	.882	28.9	66	50	6.9	.891	27.3	105	65	7.1	.899	25.9	180	80	1.0	------	------	12.6	.791	47.4	5.0	.825	40.0
97	4.5	.867	31.7	58	55	3.7	.879	29.5	81	70	3.9	.890	27.5	135	85	14.9	.672	79.1	45.0	.730	62.3	17.1	.813	42.6
98	5.8	.878	29.7	70	45	4.2	.894	26.8	105	60	4.5	.901	25.6	175	75	6.2	.686	74.8	22.4	.740	59.7	9.0	.816	41.9
99	5.1	.872	30.8	60	45	4.6	.883	28.8	84	65	5.0	.893	27.0	135	75	10.9	.688	74.2	33.2	.737	60.5	10.8	.814	42.3
100	5.7	.871	31.0	58	45	5.2	.880	29.3	85	65	5.3	.895	26.6	135	80	6.0	.704	69.5	30.1	.752	56.7	12.5	.811	43.0
101	6.2	.875	30.2	67	50	5.7	.888	27.9	100	65	7.0	.898	26.1	185	85	4.2	.744	58.7	14.2	.771	52.0	3.7	.813	42.6
102	6.3	.878	29.7	66	45	6.1	.887	28.0	98	65	6.0	.900	25.7	170	80	3.4	.712	67.2	18.8	.759	54.9	5.0	.813	42.6
103	5.3	.877	29.9	66	45	5.8	.886	28.2	105	60	4.0	.899	25.9	150	80	3.2	.716	66.1	17.3	.754	56.2	9.5	.814	42.3
104	7.8	.872	30.8	60	45	7.4	.886	28.2	91	65	6.7	.896	26.4	155	80	------	------	------	7.8	.808	43.6	------	------	------
Kentucky																								
105	4.3	.865	32.1	59	50	6.5	.884	28.6	98	65	5.9	.891	27.3	150	95	7.5	.702	70.1	31.2	.751	56.9	10.8	.810	43.2
106	5.2	.865	32.1	65	55	5.2	.874	30.4	92	65	6.0	.882	28.9	150	80	8.2	.684	75.4	30.8	.747	57.9	10.9	.814	42.3
107	6.6	.867	31.7	61	35	6.0	.875	30.2	90	60	7.1	.883	28.8	155	75	2.6	.718	65.6	19.7	.771	52.0	9.9	.820	41.1
108	5.2	.865	32.1	67	55	4.9	.880	29.3	98	80	6.0	.896	26.4	160	95	10.5	.706	68.9	33.1	.744	58.7	11.2	.812	42.8
109	6.5	.855	34.0	56	45	6.3	.864	32.3	79	58	6.5	.872	30.8	120	70	------	------	------	11.2	.757	55.4	24.5	.804	44.5
110	5.9	.872	30.8	64	45	5.7	.884	28.6	94	60	5.4	.898	26.1	185	75	2.3	.732	61.8	12.6	.767	53.0	9.3	.818	41.5
111	5.6	.865	32.1	59	50	4.7	.886	28.2	94	65	5.9	.894	26.8	160	80	12.9	.686	74.8	35.9	.744	58.7	9.2	.816	41.9
112	4.5	.882	28.9	66	45	5.4	.891	27.3	105	65	7.7	.910	24.0	175	80	11.2	.681	76.3	30.2	.733	61.5	9.5	.814	42.3
113	5.5	.883	28.8	60	55	5.0	.890	27.5	92	80	5.0	.898	26.1	145	90	12.3	.698	71.2	35.9	.751	56.9	5.7	.825	40.0
Louisiana																								
114	9.3	.922	22.0	115	(11)	7.9	.931	20.5	255	(11)	9.1	.938	19.4	(19)	(11)	------	------	------	------	------	------	------	------	------
115	4.7	.861	32.8	57	60	3.7	.876	30.0	80	75	3.7	.895	26.6	145	90	------	------	------	27.6	.764	53.7	36.1	.805	44.3
116	6.4	.858	33.4	58	50	5.3	.871	31.0	78	70	5.9	.879	29.5	125	85	9.4	.729	62.6	25.7	.751	56.9	18.9	.806	44.1
117	5.3	.861	32.8	61	60	4.6	.867	31.7	94	80	5.2	.884	28.6	150	100	------	------	------	35.2	.748	57.7	22.4	.795	46.5
118	9.3	.857	33.6	58	50	9.3	.869	31.3	83	70	9.7	.874	30.4	125	90	------	------	------	1.9	.825	40.0	------	------	------
119	9.0	.915	23.1	105	(11)	8.1	.939	19.2	215	(11)	9.0	.963	15.4	(19)	(11)	------	------	------	------	------	------	------	------	------
120	8.6	.874	30.4	57	50	7.2	.882	28.9	83	70	7.2	.904	25.0	140	85	------	------	------	13.5	.793	46.9	------	------	------
121	5.9	.871	31.0	61	45	5.1	.880	29.3	87	65	5.9	.892	27.1	150	85	7.6	.685	75.1	30.2	.736	60.8	15.5	.812	42.8
122	6.7	.925	21.5	120	(11)	6.1	.932	20.3	245	(11)	8.3	.939	19.2	(19)	(11)	------	------	------	------	------	------	------	------	------
123	8.6	.900	25.7	78	30	7.8	.904	25.0	120	50	7.8	.909	24.2	195	70	------	------	------	------	------	------	------	------	------
124	8.6	.936	19.7	110	(11)	9.2	.948	17.8	230	(11)	9.9	.957	16.4	(19)	(11)	------	------	------	------	------	------	------	------	------

[11] Pour point below 5° F.
[13] Combined with the next heavier fraction.

[18] Sample too dark in color to allow determination of cloud point.
[19] Viscosity, Saybolt, at 100° F., above 400 seconds.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Distillation at reduced pressure (40 mm.)—Continued															Summary								
	Fraction, 225° to 250° C. (437° to 482° F.)					Fraction, 250° to 275° C. (482° to 527° F.)					Fraction, 275° to 300° C. (527° to 572° F.)					Gasoline, light ends			Total, gasoline and naphtha			Kerosene distillate		
	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)	Cloud point (°F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)	Cloud point (°F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)	Cloud point (°F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
Montana																								
125	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	9.7	0.690	73.6	60.1	0.746	58.2	25.9	0.809	43.4
126	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	7.2	.689	73.9	60.7	.744	58.7	27.4	.811	43.0
127	7.2	0.904	25.0	68	20	6.8	0.911	23.8	105	55	7.0	0.919	22.5	210	80	6.0	.681	76.3	21.6	.741	59.5	4.5	.819	41.3
128	7.5	.897	26.3	64	45	6.8	.911	23.8	99	60	6.3	.917	22.8	180	80	7.1	.671	79.4	24.0	.732	61.8	9.4	.817	41.7
New Mexico																								
129	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	37.0	.661	82.6	70.8	.702	70.1	12.1	.810	43.2
New York																								
130	5.5	.849	35.2	53	55	5.8	.859	33.2	73	75	6.3	.873	30.6	120	90	5.3	.704	69.5	30.0	.748	57.7	17.5	.802	44.9
Ohio																								
131	5.7	.847	35.6	59	55	4.8	.862	32.7	79	70	6.3	.871	31.0	130	85	6.8	.693	72.7	27.8	.740	59.7	17.0	.805	44.3
132	4.9	.887	28.0	82	([11])	4.9	.895	26.6	140	([11])	6.3	.899	25.9	245	([11])	-----	-----	-----	-----	-----	-----	-----	-----	-----
133	5.3	.860	33.0	52	55	5.4	.879	29.5	83	80	5.5	.890	27.5	140	85	6.7	.700	70.6	31.0	.749	57.4	19.2	.815	42.1
134	5.6	.858	33.4	52	55	5.9	.879	29.5	87	80	4.9	.889	27.7	145	90	5.0	.707	68.6	27.0	.758	55.2	12.4	.813	42.6
135	6.2	.850	35.0	51	55	5.0	.860	33.0	89	70	5.5	.868	31.5	130	80	7.1	.691	73.3	33.5	.739	60.0	20.2	.798	45.8
Oklahoma																								
136	5.6	.888	27.9	67	50	5.2	.896	26.4	105	65	9.7	.904	25.0	165	80	5.6	.705	69.2	22.7	.751	56.9	10.0	.818	41.5
137	7.8	.881	29.1	61	45	6.0	.892	27.1	99	65	5.1	.906	24.7	175	80	1.8	.710	67.8	22.1	.763	54.0	5.2	.813	42.6
138	4.1	.853	34.4	63	50	4.1	.862	32.7	98	70	3.4	.874	30.4	170	90	16.2	.678	77.2	46.2	.726	63.4	17.8	.804	44.5
139	4.9	.869	31.3	66	50	5.5	.878	29.7	95	65	4.8	.890	27.5	185	80	12.3	.688	74.2	37.6	.737	60.5	10.8	.810	43.2
140	7.1	.887	28.0	72	55	5.7	.894	26.8	110	65	7.5	.903	25.2	195	80	2.6	-----	-----	19.0	.779	50.1	5.7	.825	40.0
141	6.2	.870	31.1	66	50	5.4	.880	29.3	96	65	6.5	.890	27.5	170	80	5.9	.684	75.4	24.6	.749	57.4	5.5	.816	41.9
142	4.6	.874	30.4	68	45	4.8	.889	27.7	99	65	5.5	.894	26.8	190	80	6.0	.685	75.1	29.9	.749	57.4	9.8	.817	41.7
143	6.6	.879	29.5	60	45	4.8	.886	28.2	100	65	6.1	.896	26.4	170	80	5.9	.701	70.4	28.1	.754	56.2	12.3	.818	41.5

144	5.3	.871	31.0	58	50	4.3	.881	29.1	78	70	4.8	.890	27.5	120	80	12.1	.684	75.4	40.4	.739	60.0	12.1	.813	42.6
145	5.2	.874	30.4	65	50	4.1	.880	29.3	96	70	4.8	.898	26.1	165	90	7.8	.705	69.2	36.3	.748	57.7	12.3	.810	43.2
146	6.4	.865	32.1	63	50	6.0	.875	30.2	94	70	5.9	.879	29.5	155	85	2.4	.718	65.6	24.1	.762	54.2	19.6	.816	41.9
147	5.6	.874	30.4	64	55	3.6	.889	27.7	92	70	4.6	.899	25.9	175	85	12.1	.697	71.5	38.8	.743	58.9	12.0	.813	42.6
148	5.8	.876	30.0	65	50	5.7	.886	28.2	94	65	5.2	.896	26.4	165	80	4.1	.713	67.0	26.2	.764	53.7	11.7	.819	41.3
149	5.9	.860	33.0	58	60	5.7	.870	31.1	80	70	5.4	.884	28.6	130	90	10.4	.678	77.2	34.4	.725	63.7	18.9	.803	44.7
150	5.9	.875	30.2	65	55	5.3	.883	28.8	105	75	5.3	.905	24.9	180	90	8.5	.696	71.8	29.7	.746	58.2	11.0	.816	41.9
151	6.1	.882	28.9	64	45	6.3	.889	27.7	105	60	6.6	.898	26.1	145	80	2.3	.727	63.1	20.4	.771	52.0	5.7	.818	41.5
152	6.7	.864	32.3	65	50	5.9	.873	30.6	100	70	7.4	.886	28.2	120	85	1.4	.732	61.8	20.2	.766	53.2	20.7	.809	43.4
153	6.3	.863	32.5	59	45	5.3	.872	30.8	88	60	6.6	.882	28.9	150	75	------	------	------	16.8	.775	51.1	13.3	.812	42.8
154	6.1	.872	30.8	66	55	5.5	.884	28.6	99	65	6.5	.895	26.6	185	80	2.5	.708	68.4	23.8	.761	54.4	12.7	.815	42.1
155	5.5	.875	30.2	65	50	6.1	.892	27.1	120	65	4.0	.905	24.9	185	90	5.6	.703	69.8	30.6	.753	56.4	13.0	.814	42.3
156	5.2	.878	29.7	67	50	4.6	.889	27.7	100	70	5.9	.899	25.9	170	85	5.6	.710	67.8	26.3	.755	55.9	11.0	.814	42.3
157	6.1	.872	30.8	61	45	4.1	.881	29.1	95	60	5.9	.890	27.5	175	80	10.1	.697	71.5	34.5	.744	58.7	10.8	.815	42.1
158	4.9	.870	31.1	59	55	4.7	.881	29.1	89	70	4.7	.896	26.4	160	85	8.6	.687	74.5	37.5	.743	58.9	12.4	.811	43.0
159	5.3	.868	31.5	65	45	5.2	.885	28.4	93	65	5.9	.893	27.0	165	80	9.9	.686	74.8	32.1	.740	59.7	10.9	.811	43.0
160	6.0	.880	29.3	65	45	6.3	.896	26.4	110	65	5.2	.907	24.5	170	75	1.9	.713	67.0	19.9	.765	53.5	6.6	.811	43.0
161	6.1	.880	29.3	65	45	6.3	.892	27.1	96	65	6.1	.902	25.4	175	80	4.7	.713	67.0	25.3	.757	55.4	5.9	.811	43.0
162	6.0	.875	30.2	68	55	5.1	.888	27.9	115	70	6.5	.904	25.0	180	85	7.4	.700	70.6	31.4	.746	58.2	11.6	.808	43.6
163	5.4	.875	30.2	63	50	5.7	.887	28.0	110	70	9.0	.895	26.6	165	85	3.5	.718	65.6	19.5	.765	53.5	10.7	.820	41.1
164	4.5	.871	31.0	66	60	3.3	.881	29.1	99	80	2.7	.891	27.3	150	100	17.3	.692	73.0	52.4	.737	60.5	10.6	.808	43.6
165	5.2	.878	29.7	67	50	5.1	.890	27.5	100	65	6.4	.905	24.9	185	80	5.0	.715	66.4	24.8	.762	54.2	5.9	.814	42.3
166	4.4	.881	29.1	66	50	4.8	.895	26.6	115	65	8.1	.902	25.4	190	85	5.4	.700	70.6	24.8	.751	56.9	10.0	.810	43.2
167	3.9	.875	30.2	69	50	5.1	.894	26.8	110	60	9.7	.908	24.3	195	85	9.4	.687	74.5	29.3	.736	60.8	9.4	.811	43.0
168	6.3	.876	30.0	65	50	8.1	.890	27.5	105	65	11.3	.905	24.9	180	80	.6	------	------	5.2	.800	45.4	------	------	------
169	6.5	.880	29.3	71	50	4.8	.892	27.1	110	65	7.3	.901	25.6	195	85	7.1	.704	69.5	22.3	.753	56.4	9.7	.818	41.5
170	6.0	.869	31.3	66	50	5.1	.877	29.9	94	65	5.9	.885	28.4	160	80	5.1	.701	70.4	25.3	.754	56.2	11.6	.814	42.3
171	4.8	.877	29.9	65	50	4.7	.888	27.9	105	65	7.7	.905	24.9	180	85	7.5	.688	74.2	26.6	.737	60.5	9.3	.810	43.2
172	5.5	.869	31.3	59	50	5.3	.881	29.1	78	70	5.3	.892	27.1	140	85	8.0	.691	73.3	29.8	.743	58.9	10.8	.812	42.8
173	6.8	.882	28.9	73	50	5.1	.891	27.3	115	65	8.4	.910	24.0	215	80	3.0	.725	63.7	22.0	.767	53.0	11.3	.819	41.3
174	6.9	.883	28.8	69	45	4.3	.889	27.7	105	65	5.4	.897	26.3	170	80	7.8	.694	72.4	30.9	.745	58.4	12.8	.818	41.5
175	5.0	.870	31.1	61	50	5.2	.881	29.1	95	65	5.4	.894	26.8	170	85	7.7	.704	69.5	32.9	.750	57.2	12.3	.814	42.3
176	6.1	.885	28.4	72	45	6.3	.892	27.1	110	65	5.8	.903	25.2	200	80	1.1	------	------	14.6	.771	52.0	4.7	.813	42.6
177	5.8	.864	32.3	67	45	5.3	.874	30.4	90	65	6.1	.888	27.9	155	80	5.4	.703	69.8	28.3	.752	56.7	11.7	.810	43.2
178	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	9.1	.731	62.1	85.5	.748	57.7	10.5	.806	44.1
179	6.4	.865	32.1	60	50	4.7	.873	30.6	90	70	4.1	.884	28.6	135	85	8.6	.690	73.6	35.9	.743	58.9	18.9	.815	42.1
180	6.1	.878	29.7	64	50	5.1	.889	27.7	96	65	6.0	.899	25.9	180	80	8.1	.697	71.5	28.2	.750	57.2	4.8	.815	42.1
181	6.3	.863	32.5	65	50	5.9	.873	30.6	89	65	7.3	.883	28.8	155	80	2.7	.715	66.4	19.5	.762	54.2	11.3	.813	42.6
182	6.3	.863	32.5	68	55	6.5	.870	31.1	91	70	7.5	.878	29.7	155	85	3.0	.713	67.0	17.3	.759	54.9	17.3	.815	42.1
183	5.7	.880	29.3	72	50	5.3	.890	27.5	135	70	6.0	.904	25.0	250	80	8.9	.696	71.8	27.2	.744	58.7	4.9	.813	42.6
184	5.9	.875	30.2	67	50	5.3	.885	28.4	100	65	5.8	.894	26.8	170	80	5.0	.714	66.7	26.9	.761	54.4	12.3	.819	41.3
185	4.3	.886	28.2	78	55	5.5	.895	26.6	100	65	6.2	.903	25.2	210	80	3.9	.699	70.9	26.4	.751	56.9	13.0	.818	41.5
186	5.1	.864	32.3	64	45	4.9	.876	30.0	96	60	4.1	.886	28.2	170	75	15.2	.679	76.9	39.6	.728	62.9	10.5	.811	43.0
187	5.6	.872	30.8	57	55	5.1	.881	29.1	81	75	5.2	.897	26.3	140	90	9.8	.696	71.8	39.1	.748	57.7	13.2	.815	42.1
188	5.9	.873	30.6	61	50	4.7	.887	28.0	92	70	4.9	.897	26.3	170	85	4.0	.713	67.0	24.8	.756	55.7	11.6	.812	42.8
189	5.1	.868	31.5	58	55	4.7	.881	29.1	83	70	5.7	.894	26.8	170	90	9.1	.680	76.6	34.0	.738	60.2	11.1	.808	43.6
190	4.7	.866	31.9	58	50	4.3	.876	30.0	89	70	4.7	.889	27.7	160	80	11.4	.686	74.8	38.0	.729	62.6	19.1	.809	43.4
191	5.3	.881	29.1	69	50	7.1	.896	26.4	100	65	6.5	.906	24.7	180	80	3.4	.718	65.6	20.3	.773	51.6	5.5	.821	40.9
192	6.1	.891	27.3	85	45	4.5	.902	25.4	130	60	6.2	.910	24.0	230	75	7.4	.695	72.1	22.9	.746	58.2	4.5	.819	41.3
193	5.1	.876	30.0	60	70	4.1	.882	28.9	85	80	4.2	.893	27.0	150	95	14.8	.689	73.9	43.2	.728	62.9	12.0	.813	42.6
194	4.0	.866	31.9	57	70	4.4	.877	29.9	78	80	4.5	.887	28.0	120	90	14.5	.690	73.6	41.6	.740	59.7	12.6	.816	41.9

[11] Pour point below 5° F.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Distillation at reduced pressure (40 mm.)—Continued															Summary								
	Fraction, 225° to 250° C. (437° to 482° F.)					Fraction, 250° to 275° C. (482° to 527° F.)					Fraction, 275° to 300° C. (527° to 572° F.)					Gasoline, light ends			Total, gasoline and naphtha			Kerosene distillate		
	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)	Cloud point (°F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)	Cloud point (°F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)	Cloud point (°F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
Oklahoma—Con.																								
195	5.2	0.870	31.1	58	55	4.3	0.883	28.8	78	75	5.0	0.898	26.1	120	90	11.0	0.687	74.5	40.8	0.743	58.9	11.8	0.812	42.8
196	6.0	.866	31.9	64	45	6.4	.877	29.9	96	60	7.2	.897	26.3	170	75	1.7	------	------	16.9	.765	53.5	11.2	.814	42.3
197	5.2	.877	29.9	65	50	4.5	.891	27.3	100	65	4.8	.906	24.7	180	80	6.9	.701	70.4	27.7	.747	57.9	11.2	.805	44.3
198	5.3	.880	29.3	64	65	4.1	.891	27.3	90	80	4.9	.899	25.9	150	95	10.6	.692	73.0	40.4	.745	58.4	12.9	.818	41.5
199	6.2	.875	30.2	64	50	6.1	.886	28.2	100	65	5.9	.896	26.4	190	90	2.6	.700	70.6	19.2	.755	55.9	9.8	.831	38.8
200	6.4	.888	27.9	68	50	5.5	.902	25.4	110	65	6.3	.912	23.7	230	80	.7	------	------	10.5	.780	49.9	3.8	.822	40.6
201	4.7	.879	29.5	69	50	5.4	.890	27.5	105	65	6.8	.901	25.6	200	80	5.0	.712	67.2	22.2	.760	54.7	4.9	.814	42.3
Pennsylvania																								
202	7.9	.841	36.8	56	60	5.8	.845	36.0	68	75	6.2	.854	34.2	95	95	5.8	.680	76.6	23.8	.736	60.8	16.8	.792	47.2
203	5.0	.844	36.2	55	55	4.3	.854	34.2	72	70	5.7	.859	33.2	105	85	7.9	.682	76.0	37.8	.733	61.5	20.2	.792	47.2
204	6.5	.845	36.0	50	60	5.4	.856	33.8	74	80	6.1	.865	32.1	105	85	6.3	.689	73.9	29.0	.745	58.4	18.7	.803	44.7
205	6.6	.851	34.8	53	60	4.5	.853	34.4	87	80	6.3	.865	32.1	110	90	9.3	.681	76.3	33.9	.734	61.3	19.9	.802	44.9
206	5.1	.848	35.4	54	55	5.5	.857	33.6	75	70	5.7	.867	31.7	115	85	7.8	.686	74.8	32.5	.739	60.0	17.8	.802	44.9
207	6.5	.841	36.8	51	55	5.7	.861	32.8	78	70	5.2	.870	31.1	115	75	7.3	.693	72.7	29.6	.746	58.2	22.4	.811	43.0
208	6.3	.839	37.2	54	60	5.9	.861	32.8	77	75	7.1	.870	31.1	115	85	4.8	.715	66.4	24.4	.761	54.4	16.4	.811	43.0
209	6.3	.858	33.4	67	10	7.2	.873	30.6	92	20	8.4	.876	30.0	130	30	------	------	------	6.0	.819	41.3	------	------	------
Texas																								
210	4.7	.860	33.0	52	60	5.0	.865	32.1	70	80	6.2	.874	30.4	105	95	12.2	.682	76.0	30.9	.730	62.3	8.0	.806	44.1
211	5.0	.903	25.2	81	(11)	4.2	.910	24.0	130	(11)	5.7	.915	23.1	320	(11)	6.9	.707	68.6	31.0	.757	55.4	5.5	.825	40.0
212	7.4	.918	22.6	89	(11)	6.8	.925	21.5	170	(11)	7.1	.934	20.0	(19)	(11)	------	------	------	8.2	.789	47.8	------	------	------
213	7.3	.950	17.5	180	(11)	8.2	.958	16.2	(19)	(11)	7.9	.964	15.3	[18] 79	(11)	------	------	------	------	------	------	------	------	------
214	5.8	.908	24.3	94	(11)	6.9	.927	21.1	200	(11)	8.0	.949	17.6	(19)	(11)	3.1	.746	58.2	16.2	.784	49.0	------	------	------
215	6.2	.874	30.4	57	45	4.7	.889	27.7	93	70	5.0	.900	25.7	160	90	5.1	.707	68.6	30.0	.757	55.4	12.4	.815	42.1
216	6.5	.883	28.8	68	40	7.2	.898	26.1	99	60	5.8	.905	24.9	190	85	5.3	.696	71.8	24.5	.747	57.9	11.2	.815	42.1

217	5.1	.880	29.3	63	55	4.6	.889	27.7	100	70	4.8	.908	24.3	180	90	10.1	.693	72.7	36.7	.742	59.2	11.3	.813	42.6
218	5.6	.858	33.4	65	45	6.1	.870	31.1	97	65	4.3	.885	28.4	170	80	5.4	.711	67.5	30.5	.756	55.7	12.9	.814	42.3
219	5.4	.845	36.0	54	60	4.0	.857	33.6	77	75	3.5	.869	31.3	130	95	3.3	.695	72.1	31.5	.742	59.2	31.7	.793	46.9
220	4.8	.867	31.7	58	55	6.1	.878	29.7	74	70	5.8	.891	27.3	135	85	9.7	.703	69.8	36.7	.752	56.7	11.6	.818	41.5
221	5.7	.873	30.6	68	50	4.4	.885	28.4	120	75	5.2	.894	26.8	190	85	8.7	.694	72.4	31.4	.738	60.2	13.2	.801	45.2
222	7.8	.877	29.9	72	60	6.3	.893	27.0	120	65	7.9	.898	26.1	200	85	.7	------	------	14.1	.779	50.1	5.3	.825	40.0
223	8.0	.935	19.8	110	(11)	8.5	.940	19.0	220	(11)	8.3	.945	18.2	(19)	(11)	------	------	------	------	------	------	------	------	------
224	9.8	.936	19.7	105	(11)	8.5	.946	18.1	300	(11)	8.9	.957	16.4	[18] 65	(11)	------	------	------	5.8	.818	41.5	------	------	------
225	5.5	.873	30.6	68	45	5.1	.890	27.5	105	65	5.9	.896	26.4	190	80	4.1	.728	62.9	29.4	.761	54.4	13.0	.812	42.8
226	4.1	.872	30.8	53	60	7.4	.869	31.3	89	80	4.6	.899	25.9	140	90	11.8	.697	71.5	35.8	.749	57.4	11.5	.821	40.9
227	4.5	.882	28.9	61	60	3.9	.890	27.5	88	75	3.8	.899	25.9	130	85	15.0	.684	75.4	38.2	.729	62.6	10.3	.806	44.1
228	2.8	.873	30.6	62	70	3.7	.880	29.3	80	80	5.1	.892	27.1	130	90	11.8	.684	75.4	35.9	.736	60.8	10.4	.811	43.0
229	8.5	.927	21.1	120	(11)	6.3	.938	19.4	240	(11)	9.9	.946	18.1	(19)	(11)	------	------	------	------	------	------	------	------	------
230	7.3	.926	21.3	115	(11)	7.2	.934	20.0	245	(11)	8.5	.939	19.2	(19)	(11)	------	------	------	------	------	------	------	------	------
231	7.2	.919	22.5	100	(11)	7.1	.928	21.0	195	(11)	8.0	.949	17.6	(19)	(11)	------	------	------	------	------	------	------	------	------
232	8.0	.914	23.3	89	(11)	6.2	.924	21.6	180	(11)	5.6	.937	19.5	(19)	(11)	------	------	------	------	------	------	------	------	------
233	4.9	.878	29.7	64	55	4.2	.894	26.8	98	70	4.9	.908	24.3	180	90	13.4	.688	74.2	38.2	.734	61.3	10.5	.812	42.8
234	6.3	.904	25.0	97	30	5.0	.914	23.3	175	40	7.1	.925	21.5	(19)	55	6.5	.703	69.8	26.6	.762	54.2	------	------	------
235	7.4	.916	23.0	105	(11)	7.1	.928	21.0	220	(11)	10.9	.936	19.7	(19)	(11)	------	------	------	3.8	.800	45.4	------	------	------
236	8.8	.943	18.6	160	(11)	5.6	.951	17.3	380	(11)	10.7	.957	16.4	[18] 74	(11)	------	------	------	------	------	------	------	------	------
237	8.1	.932	20.3	105	(11)	8.4	.944	18.4	215	(11)	5.3	.957	16.4	(19)	(11)	------	------	------	3.7	.823	40.4	------	------	------
238	5.4	.870	31.1	60	55	5.1	.878	29.7	91	80	4.7	.889	27.7	175	95	12.5	.690	73.6	38.0	.743	58.9	12.4	.815	42.1
239	5.1	.874	30.4	62	50	5.3	.885	28.4	85	60	5.6	.892	27.1	200	80	4.5	.710	67.8	29.6	.761	54.4	12.6	.814	42.3
240	5.6	.878	29.7	72	55	6.2	.895	26.6	130	75	5.4	.915	23.1	230	90	8.9	.699	70.9	35.1	.746	58.2	11.8	.815	42.1
241	6.3	.880	29.3	62	55	4.4	.895	26.6	105	70	5.2	.902	25.4	160	90	7.5	.702	70.1	31.2	.746	58.2	10.5	.813	42.6
242	9.4	.858	33.4	55	60	7.0	.867	31.7	73	75	8.5	.878	29.7	115	90	------	------	------	5.0	.782	49.5	9.7	.820	41.1
243	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	50.2	.782	49.5	9.3	.809	43.4
244	6.6	.862	32.7	63	50	5.7	.877	29.9	92	70	4.9	.894	26.8	170	85	------	------	------	17.3	.768	52.7	28.4	.807	43.8
245	7.5	.934	20.0	115	(11)	5.0	.947	17.9	340	(11)	8.6	.961	15.7	[18] 78	(11)	------	------	------	------	------	------	------	------	------
246	5.6	.873	30.6	62	55	4.4	.882	28.9	87	70	4.7	.897	26.3	155	85	8.4	.697	71.5	34.4	.743	58.9	11.3	.808	43.6
247	8.6	.904	25.0	94	(11)	8.6	.912	23.7	160	(11)	9.3	.918	22.6	(19)	(11)	------	------	------	------	------	------	------	------	------
248	5.5	.937	19.5	92	25	6.9	.938	19.4	180	40	6.7	.941	18.9	435	55	------	------	------	9.8	.796	46.3	------	------	------
249	5.2	.864	32.3	59	50	4.9	.872	30.8	71	80	6.2	.887	28.0	140	90	8.6	.693	72.7	34.4	.744	58.7	12.2	.812	42.8
250	8.3	.910	24.0	92	55	8.5	.924	21.6	180	70	5.9	.928	21.0	350	100	------	------	------	------	------	------	------	------	------
251	5.7	.853	34.4	56	65	5.7	.859	33.2	76	85	6.6	.874	30.4	110	100	7.0	.689	73.9	22.3	.741	59.5	16.1	.814	42.3
252	5.1	.877	29.9	64	50	5.2	.890	27.5	105	70	5.7	.907	24.5	200	90	6.3	.710	67.8	34.0	.752	56.7	12.5	.812	42.8
253	9.7	.940	19.0	79	(11)	7.2	.951	17.3	210	(11)	9.7	.954	16.8	(19)	(11)	------	------	------	------	------	------	------	------	------
254	9.0	.930	20.7	150	(11)	7.8	.952	17.1	(19)	(11)	12.5	.957	16.4	[18] 100	(11)	------	------	------	------	------	------	------	------	------
255	4.7	.857	33.6	56	50	4.4	.869	31.3	74	65	5.0	.876	30.0	120	80	12.9	.687	74.5	40.8	.740	59.7	11.6	.811	43.0
256	7.7	.887	28.0	67	(11)	6.5	.898	26.1	105	(11)	7.7	.905	24.9	190	45	------	------	------	10.3	.800	45.4	6.4	.821	40.9
257	5.3	.876	30.0	71	55	5.1	.890	27.5	120	75	6.0	.898	26.1	235	95	7.2	.694	72.4	31.6	.746	58.2	12.8	.803	44.7
258	5.6	.874	30.4	70	65	5.4	.890	27.5	105	85	4.5	.902	25.4	180	100	5.4	.717	65.9	30.2	.759	54.9	13.1	.815	42.1
259	5.0	.867	31.7	61	55	4.7	.878	29.7	100	75	5.2	.891	27.3	190	90	3.9	.700	70.6	33.0	.738	60.2	24.1	.798	45.8
260	3.8	.870	31.1	51	55	4.4	.888	27.9	120	75	6.3	.893	27.0	190	90	5.2	.686	74.8	29.6	.741	59.5	14.3	.800	45.4
261	8.2	.866	31.9	63	50	6.4	.876	30.0	88	70	4.7	.885	28.4	125	85	------	------	------	15.3	.782	49.5	4.4	.819	41.3
262	7.9	.944	18.4	165	(11)	6.5	.956	16.5	(19)	(11)	8.0	.970	14.4	(19)	(11)	------	------	------	------	------	------	------	------	------
263	8.1	.930	20.7	90	(11)	6.0	.944	18.4	200	(11)	3.0	.954	16.8	285	(11)	------	------	------	------	------	------	------	------	------
264	4.5	.872	30.8	62	55	4.1	.887	28.0	87	75	4.3	.898	26.1	145	90	10.5	.672	79.1	38.8	.735	61.0	18.3	.812	42.8
265	5.2	.887	28.0	65	50	4.1	.906	24.7	110	70	4.5	.911	23.8	165	80	7.5	.691	73.3	31.0	.746	58.2	10.7	.818	41.5

[11] Pour point below 5° F.

[18] Viscosity, Saybolt seconds, taken at 212° F.

[19] Viscosity, Saybolt, at 100° F., above 400 seconds.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Distillation at reduced pressure (40 mm.)—Continued: Fraction, 225° to 250° C. (437° to 482° F.)					Fraction, 250° to 275° C. (482° to 527° F.)					Fraction, 275° to 300° C. (527° 572° F.)					Summary: Gasoline, light ends			Total, gasoline and naphtha			Kerosene distillate		
	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)	Cloud point (°F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)	Cloud point (°F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Viscosity (seconds)	Cloud point (°F.)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
Texas—Contd.																								
266	6.9	0.926	21.3	89	(11)	6.4	0.932	20.3	200	(11)	6.3	0.937	19.5	(19)	(11)	---	---	---	16.7	0.765	53.5	---	---	---
267	6.0	.867	31.7	56	50	5.1	.871	31.0	90	60	5.7	.889	27.7	135	90	6.5	0.700	70.6	32.7	.751	56.9	12.7	0.814	42.3
268	5.1	.866	31.9	61	55	5.1	.876	30.0	91	70	5.1	.889	27.7	160	85	10.3	.684	75.4	36.3	.741	59.5	11.3	.815	42.1
269	4.4	.877	29.9	65	55	4.7	.892	27.1	86	75	4.8	.899	25.9	130	85	15.3	.690	73.6	38.8	.737	60.5	10.1	.817	41.7
270	4.2	.875	30.2	69	60	3.9	.890	27.5	85	75	3.6	.900	25.7	130	90	14.8	.685	75.1	38.7	.735	61.0	11.5	.818	41.5
271	8.1	.933	20.2	125	(11)	9.1	.940	19.0	265	(11)	9.2	.950	17.5	(19)	(11)	---	---	---	---	---	---	---	---	---
272	7.3	.873	30.6	64	45	5.2	.881	29.1	90	65	6.7	.890	27.5	145	80	2.3	.703	69.8	24.4	.763	54.0	13.5	.812	42.8
273	7.4	.922	22.0	110	(11)	8.0	.930	20.7	245	(11)	9.9	.936	19.7	(19)	(11)	---	---	---	---	---	---	---	---	---
274	5.0	.877	29.9	61	50	5.0	.889	27.7	100	70	5.1	.904	25.0	190	90	10.8	.692	73.0	38.0	.739	60.0	11.7	.811	43.0
275	6.0	.872	30.8	55	60	5.4	.892	27.1	87	65	4.3	.904	25.0	165	85	9.6	.693	72.7	36.5	.745	58.4	5.7	.815	42.1
276	6.1	.861	32.8	59	60	5.6	.871	31.0	83	80	5.7	.880	29.3	125	100	1.8	---	---	26.4	.763	54.0	20.8	.809	43.4
277	8.3	.937	19.5	120	(11)	7.1	.948	17.8	250	(11)	9.6	.954	16.8	(19)	(11)	---	---	---	---	---	---	---	---	---
278	10.1	.916	23.0	83	(11)	7.8	.917	22.8	145	(11)	6.7	.919	22.5	290	(11)	---	---	---	2.5	.792	47.2	---	---	---
279	5.5	.875	30.2	60	45	5.0	.887	28.0	100	65	5.8	.896	26.4	190	80	9.1	.699	70.9	34.6	.750	57.2	13.1	.818	41.5
280	6.2	.870	31.1	61	50	5.3	.883	28.8	99	65	6.9	.897	26.3	180	80	3.4	.724	63.9	24.6	.752	56.7	10.8	.813	42.6
Utah																								
281	5.4	.862	32.7	57	60	6.6	.873	30.6	82	70	6.1	.884	28.6	145	90	10.2	.686	74.8	30.7	.741	59.5	10.8	.815	42.1
West Virginia																								
282	4.5	.844	36.2	65	65	4.6	.854	34.2	75	80	4.6	.862	32.7	110	95	12.9	.679	76.9	40.2	.727	63.1	18.0	.797	46.0
283	4.7	.840	37.0	55	55	4.2	.849	35.2	71	80	4.2	.856	33.8	110	95	12.2	.681	76.3	40.5	.730	62.3	24.3	.801	45.2
284	4.9	.841	36.8	57	60	4.9	.852	34.6	75	75	4.5	.859	33.2	120	90	12.5	.686	74.8	39.6	.731	62.1	18.4	.798	45.8
Wyoming																								
285	5.0	.875	30.2	61	45	5.8	.885	28.4	90	65	6.8	.893	27.0	160	85	6.7	.698	71.2	24.4	.746	58.2	8.2	.818	41.5
286	5.6	.867	31.7	55	55	5.5	.875	30.2	75	75	6.9	.884	28.6	120	90	5.0	.694	72.4	23.1	.743	58.9	9.8	.815	42.1

287	7.5	.931	20.5	89	30	5.5	.944	18.4	150	50	4.1	.949	17.6	250	60	------	------	------	6.4	.759	54.9	2.5	.817	41.7
288	6.9	.895	26.6	66	45	6.1	.914	23.3	99	60	7.9	.925	21.5	180	70	------	------	------	11.0	.754	56.2	9.5	.811	43.0
289	7.5	.897	26.3	66	45	7.0	.916	23.0	120	55	7.2	.935	19.8	210	70	2.7	------	------	12.8	.772	51.8	8.7	.821	40.9
290	7.5	.894	26.8	63	40	6.7	.910	24.0	100	60	9.5	.925	21.5	200	75	------	------	------	6.5	.763	54.0	9.0	.810	43.2
291	4.7	.871	31.0	54	60	4.2	.878	29.7	72	85	4.7	.884	28.6	120	100	15.7	.689	73.9	45.8	.741	59.5	5.1	.814	42.3
292	4.9	.870	31.1	53	65	5.2	.875	30.2	72	85	4.9	.884	28.6	120	100	13.9	.691	73.3	43.4	.743	58.9	11.5	.819	41.3
293	3.5	.881	29.1	56	55	3.3	.891	27.3	80	70	3.2	.897	26.3	140	95	13.1	.703	72.1	52.3	.751	56.9	10.1	.816	41.9
294	8.0	.852	34.6	56	65	5.2	.864	32.3	82	80	6.2	.877	29.9	140	95	7.8	.709	68.1	31.2	.752	56.7	9.0	.815	42.1
295	5.2	.862	32.7	56	60	4.1	.869	31.3	79	80	4.5	.881	29.1	120	95	15.7	.693	72.7	42.6	.741	59.5	13.3	.814	42.3
296	6.1	.896	26.4	64	50	7.1	.917	22.8	110	65	6.9	.929	20.8	230	85	3.8	.680	76.6	16.7	.741	59.5	8.3	.817	41.7
297	5.0	.867	31.7	58	65	4.6	.878	29.7	76	80	5.3	.884	28.6	125	100	14.4	.691	73.3	43.1	.741	59.5	11.6	.814	42.3
298	6.2	.841	36.8	52	75	4.7	.848	35.4	71	90	4.7	.858	33.4	------	100	11.4	.695	72.1	38.6	.738	60.2	17.8	.806	44.1
299	6.2	.896	26.4	39	50	6.8	.909	24.2	95	60	7.8	.917	22.8	165	85	3.6	.683	75.7	18.0	.743	58.9	9.3	.814	42.3
300	5.9	.898	26.1	64	50	6.3	.916	23.0	97	60	6.8	.927	21.1	190	85	3.9	.679	76.9	16.5	.738	60.2	8.1	.812	42.8
301	5.8	.851	34.8	54	60	5.6	.858	33.4	70	80	5.3	.865	32.1	96	95	8.8	.691	73.3	37.5	.741	59.5	18.5	.804	44.5
302	8.5	.853	34.4	54	55	6.6	.862	32.7	71	80	8.5	.870	31.1	100	100	------	------	------	15.7	.782	49.5	13.4	.816	41.9
303	7.6	.847	35.6	53	60	5.9	.857	33.6	66	80	6.7	.862	32.7	95	95	1.1	.736	60.8	28.1	.760	54.7	21.7	.805	44.3
304	7.2	.891	27.3	61	45	7.9	.907	24.5	96	60	6.1	.921	22.1	155	80	1.4	.694	72.4	11.0	.755	55.9	10.1	.816	41.9
305	9.7	.867	31.7	59	70	8.9	.878	29.7	83	85	5.7	.890	27.5	145	95	2.6	.736	60.8	14.8	.787	48.3	------	------	----
306	7.8	.893	27.0	62	55	5.9	.911	23.8	96	75	8.0	.924	21.6	190	85	------	------	------	8.6	.765	53.5	9.0	.813	42.6
307	7.7	.864	32.3	61	65	6.9	.873	30.6	84	80	7.4	.882	28.9	130	90	------	------	------	11.7	.768	52.7	9.8	.812	42.8
308	5.7	.866	31.9	56	55	5.3	.877	29.9	78	75	5.6	.887	28.0	135	90	7.0	.701	70.4	31.6	.754	56.2	11.1	.814	42.3
309	6.1	.865	32.1	53	60	5.1	.871	31.0	72	80	6.3	.883	28.8	120	90	9.6	.696	71.8	32.0	.748	57.7	5.1	.815	42.1
310	6.3	.858	33.4	57	35	6.5	.870	31.1	79	55	5.9	.884	28.6	135	70	1.7	.734	61.3	24.0	.765	53.5	19.7	.815	42.1
311	7.6	.863	32.5	56	52	6.4	.873	30.6	79	70	6.5	.883	28.8	145	85	------	------	------	21.0	.779	50.1	14.4	.821	40.9
312	7.7	.928	21.0	75	([11])	6.1	.945	18.2	140	([11])	7.2	.948	17.8	230	([11])	------	------	------	7.5	.765	53.5	2.9	.819	41.3
313	7.3	.895	26.6	50	50	7.3	.910	24.0	100	75	5.4	.923	21.8	160	90	------	------	------	8.3	.774	51.3	3.6	.814	42.3
314	5.5	.872	30.8	60	55	4.8	.882	28.9	78	75	5.4	.890	27.5	140	90	10.7	.693	72.7	31.4	.744	58.7	8.7	.819	41.3
315	5.6	.859	33.2	59	65	5.5	.871	31.0	83	75	5.8	.880	29.3	130	90	8.2	.696	71.8	29.3	.750	57.2	9.9	.817	41.7
316	5.9	.869	31.3	61	55	5.5	.886	28.2	91	70	6.2	.887	28.0	145	95	9.2	.716	66.1	29.3	.760	54.7	4.7	.821	40.9
317	9.4	.895	26.6	69	([11])	8.0	.905	24.9	110	([11])	8.4	.909	24.2	220	([11])	------	------	------	------	------	------	------	------	------
318	4.1	.870	31.1	57	50	4.8	.879	29.5	73	70	6.9	.887	28.0	105	85	6.9	.716	66.1	28.0	.765	53.5	4.0	.825	40.0
319	5.8	.895	26.6	62	45	6.7	.913	23.5	100	55	8.5	.920	22.3	140	70	------	------	------	5.4	.778	50.4	2.9	.818	41.5

[11] Pour point below 5° F.

[10] Viscosity, Saybolt, at 100° F., above 400 seconds.

TABLE 1.—*Analyses of crude petroleums*—Continued

Summary [17]—Continued

Sample No.	Gas oil: Per cent	Gas oil: Specific gravity	Gas oil: A. P. I. gravity (°)	Nonviscous lubricating distillate: Per cent	Nonviscous lubricating distillate: Specific gravity	Nonviscous lubricating distillate: A. P. I. gravity (°)	Medium lubricating distillate: Per cent	Medium lubricating distillate: Specific gravity	Medium lubricating distillate: A. P. I. gravity (°)	Viscous lubricating distillate: Per cent	Viscous lubricating distillate: Specific gravity	Viscous lubricating distillate: A. P. I. gravity (°)	Total distillate	Residuum: Per cent	Residuum: Carbon residue (per cent) [20]	Carbon residue in crude (per cent) [21]	Base of crude [21]	Analyst [22]
86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
Alaska																		
1	15.7	0.843	36.4	8.8	0.841-0.876	36.8-30.0	4.7	0.876-0.907	30.0-24.5	-----	-----	-----	86.4	10.6	9.0	1.0	Intermediate	B. A. Landry.
Arkansas																		
2	16.5	.847	35.6	10.7	.864- .893	32.2-37.0	6.8	.893- .911	27.0-23.8	-----	-----	-----	70.5	26.5	11.0	2.9	Intermediate	M. B. Cooke.
3	19.3	.866	31.9	9.4	.902- .920	25.4-22.3	7.2	.920- .932	22.3-20.3	5.8	0.932-0.937	20.3-19.5	53.2	43.8	11.3	5.0	Naphthene	Do.
4	17.2	.869	31.3	9.5	.901- .917	25.6-22.8	9.3	.917- .929	22.8-20.8	7.0	.929- .934	20.8-20.0	43.0	54.0	13.4	7.2	do	Do.
5	12.1	.856	33.8	8.4	.883- .901	28.8-25.6	8.6	.901- .915	25.6-23.1	7.9	.915- .921	23.1-22.1	37.0	60.0	17.0	10.2	Intermediate	B. A. Landry.
6	17.8	.864	32.3	10.6	.898- .921	26.1-22.1	6.9	.921- .933	22.1-20.2	5.6	.933- .943	20.2-18.6	48.2	48.8	13.4	6.5	Naphthene	Do.
7	17.0	.859	33.2	10.2	.877- .912	29.9-23.7	9.5	.912- .924	23.7-21.6	-----	-----	-----	54.1	42.9	14.6	6.3	Intermediate	Do.
8	13.7	.856	33.8	12.2	.875- .903	30.2-25.2	8.1	.903- .911	25.2-23.8	-----	-----	-----	56.0	41.0	12.9	5.3	do	L. P. Calkin.
9	17.5	.866	31.9	10.4	.903- .917	25.2-22.8	10.4	.917- .926	22.8-21.3	2.5	.926- .927	21.3-21.1	46.3	50.7	14.5	7.4	Naphthene	Do.
10	23.2	.864	32.3	10.4	.897- .920	26.3-22.3	5.9	.920- .927	22.3-21.1	4.6	.927- .933	21.1-20.2	51.2	45.8	12.7	5.8	do	Do.
California																		
11	17.3	.872	30.8	6.2	.904- .926	25.0-21.3	4.2	.926- .939	21.3-19.2	11.9	.939- .963	19.2-15.4	44.9	52.1	15.2	7.9	Naphthene	H. M. Smith.
12	20.0	.844	36.2	9.3	.873- .902	30.6-25.4	7.3	.902- .918	25.4-22.6	2.3	.918- .923	22.6-21.8	70.8	26.2	9.9	2.6	Intermediate	Do.
13	21.0	.872	30.8	5.5	.909- .926	24.2-21.3	5.0	.926- .940	21.3-19.0	11.4	.940- .956	19.0-16.5	66.7	30.3	10.9	3.3	Naphthene	Do.
14	19.4	.875	30.2	6.5	.913- .943	23.5-18.6	3.0	.943- .950	18.6-17.5	16.4	.950- .975	17.5-13.6	51.9	45.1	18.8	8.5	do	Do.
15	21.8	.862	32.7	5.7	.904- .921	25.0-22.1	3.7	.921- .932	22.1-20.3	6.9	.932- .948	20.3-17.8	74.1	22.9	9.9	2.3	do	Do.
16	23.4	.864	32.3	6.5	.901- .920	25.6-22.3	6.5	.920- .936	22.3-19.7	6.7	.936- .946	19.7-18.1	71.1	25.9	10.1	2.6	do	Do.
17	26.8	.842	36.6	2.0	.897- .917	26.3-22.8	12.7	.917- .966	22.8-15.0	7.6	.966- .982	15.0-12.6	49.1	47.9	35.9	17.2	Intermediate	B. A. Landry.
18	25.5	.854	34.2	5.6	.906- .923	24.7-21.8	5.6	.923- .936	21.8-19.7	7.8	.936- .949	19.7-17.6	54.3	42.7	15.6	6.7	do	Do.
19	34.1	.863	32.5	9.4	.877- .904	29.9-25.0	6.2	.904- .913	25.0-23.5	1.7	.913- .915	23.5-23.1	71.2	25.8	10.4	2.7	do	H. M. Smith.
20	29.9	.866	31.9	7.9	.901- .925	25.6-21.5	6.5	.925- .938	21.5-19.4	9.0	.938- .953	19.4-17.0	62.5	34.5	9.0	3.1	Naphthene	Do.
21	29.4	.870	31.1	10.2	.898- .918	26.1-22.6	5.8	.918- .928	22.6-21.0	7.7	.928- .940	21.0-19.0	67.8	29.2	10.8	3.2	Hybrid	I. H. Nelson.
22	26.8	.871	31.0	11.4	.906- .930	24.7-20.7	7.3	.930- .940	20.7-19.0	7.9	.940- .953	19.0-17.0	60.2	36.8	14.6	5.4	Naphthene	Do.

23	36.8	.886	28.2										93.1	3.9			Hybrid	Do.
24	18.7	.873	30.6	12.0	.901-.926	25.6-21.3	7.7	.926-.943	21.3-18.6	8.3	.943-.961	18.6-15.7	48.9	48.1	11.1	5.3	Naphthene	Do.
25	11.0	.885	28.4	8.4	.902-.920	25.4-22.3	7.6	.920-.935	22.3-19.8	20.7	.935-.959	19.8-16.0	47.7	49.3	10.2	5.0	do	H. M. Smith.
26	17.9	.847	35.6	8.2	.873-.898	30.6-26.1	5.6	.898-.911	26.1-23.8	5.7	.911-.924	23.8-21.6	62.6	34.4	12.8	4.4	Intermediate	L. G. Marsh.
27	16.6	.851	34.8	7.8	.870-.898	31.1-26.1	4.2	.898-.908	26.1-24.3	3.6	.908-.917	24.3-22.8	71.7	25.3	11.5	2.9	do	H. M. Smith.
28	31.4	.860	33.0	7.6	.905-.923	24.9-21.8	7.1	.923-.935	21.8-19.8	6.7	.935-.948	19.8-17.8	65.1	31.9	10.0	3.2	Naphthene	Do.
29	25.0	.872	30.8	7.1	.900-.918	25.7-22.6	5.7	.918-.933	22.6-20.2	6.9	.933-.947	20.2-17.9	68.7	28.3	9.8	2.8	do	Do.
30	27.2	.870	31.1	7.8	.908-.929	24.3-20.8	5.9	.929-.937	20.8-19.5	12.5	.937-.955	19.5-16.7	53.4	43.6	10.8	4.7	do	Do.
31	14.6	.846	35.8	4.9	.871-.900	31.0-25.7	3.0	.900-.919	25.7-22.5	3.9	.919-.942	22.5-18.7	92.9	4.1	9.5	3.8	Intermediate	Do.
32	15.6	.846	35.8	9.2	.869-.896	31.3-26.4	5.2	.896-.911	26.4-23.8	5.0	.911-.923	23.8-21.8	57.1	39.9	14.6	5.8	do	N. A. C. Smith
33	17.8	.867	31.7	6.7	.901-.924	25.6-21.6	5.6	.924-.937	21.6-19.5	8.0	.937-.950	19.5-17.5	40.2	56.8	15.3	8.7	Naphthene	H. M. Smith.
34	16.2	.853	34.4	7.0	.878-.900	29.7-25.7	5.4	.900-.915	25.7-23.1	5.9	.915-.925	23.1-21.5	63.0	34.0	13.5	4.6	Intermediate	Do.
35	14.0	.868	31.5	6.1	.907-.928	24.5-21.0	5.3	.928-.943	21.0-18.6	15.1	.943-.960	18.6-15.9	40.5	56.5	11.4	6.4	Naphthene	Do.
36	17.7	.848	35.4	8.8	.874-.901	30.4-25.6	5.0	.901-.914	25.6-23.3	4.2	.914-.926	23.3-21.3	69.4	27.6	12.5	3.5	Intermediate	Do.
37	19.4	.850	35.0	6.8	.884-.907	28.6-24.5	5.3	.907-.920	24.5-22.3	8.1	.920-.938	22.3-19.4	55.4	41.6	14.1	5.9	do	Do.
38	16.6	.856	33.8	6.5	.884-.905	28.6-24.9	5.7	.905-.921	24.9-22.1	7.2	.921-.934	22.1-20.0	60.5	36.5	14.5	5.3	do	Do.
39	20.7	.855	34.0	8.1	.879-.908	29.5-24.3	4.3	.908-.915	24.3-23.1	3.2	.915-.920	23.1-22.3	84.3	12.7	8.1	1.0	do	Do.
40	19.0	.868	31.5	8.8	.917-.940	22.8-19.0	5.5	.940-.953	19.0-17.0	12.4	.953-.967	17.0-14.8	50.8	46.2	13.2	6.1	Naphthene	L. G. Marsh.
41	23.6	.871	31.0	7.0	.914-.937	23.3-19.5	4.6	.937-.948	19.5-17.8	11.5	.948-.962	17.8-15.6	54.3	42.7	8.3	3.5	do	M. B. Cooke.
42	21.9	.867	31.7	7.0	.904-.922	25.0-22.0	4.0	.922-.937	22.0-19.5	9.9	.937-.958	19.5-16.2	70.0	27.0	10.7	2.9	do	H. M. Smith.
43	21.5	.873	30.6	6.8	.913-.931	23.5-20.5	4.5	.931-.941	20.5-18.9	12.6	.941-.965	18.9-15.1	63.8	33.2	11.1	3.7	do	Do.
44	21.1	.860	33.0	7.0	.884-.904	28.6-25.0	5.4	.904-.916	25.0-23.0	6.7	.916-.928	23.0-21.0	64.1	32.9	11.8	3.9	Hybrid	Do.
45	16.6	.877	29.9	5.3	.919-.934	22.5-20.0	5.0	.934-.948	20.0-17.8	18.3	.948-.974	17.8-13.8	45.2	51.8	14.2	7.4	Naphthene	Do.
46	14.5	.878	29.7	6.6	.910-.931	24.0-20.5	6.6	.931-.949	20.5-17.6	19.9	.949-.984	17.6-12.3	47.6	49.4	14.9	7.4	do	Do.
47	22.3	.874	30.4	7.1	.913-.934	23.5-20.0	5.9	.934-.951	20.0-17.3	14.4	.951-.970	17.3-14.4	60.8	36.2	12.0	4.3	do	Do.
48	15.4	.844	36.2	7.6	.916-.935	23.0-19.8	5.4	.935-.950	19.8-17.5	17.4	.950-.968	17.5-14.7	45.8	51.2	13.7	7.0	do	Do.
49	19.4	.876	30.0	10.2	.905-.925	24.9-21.5	7.3	.925-.936	21.5-19.7	9.2	.936-.947	19.7-17.9	46.1	50.9	15.2	7.7	do	F. W. Lane.
50	28.1	.866	31.9	9.8	.890-.907	27.5-24.5	9.3	.907-.920	24.5-22.3	6.9	.920-.929	22.3-20.8	64.7	32.3	10.4	3.4	Hybrid	H. M. Smith.
51	22.0	.854	34.2	6.1	.891-.913	27.3-23.5	3.8	.913-.929	23.5-20.8	7.3	.929-.946	20.8-18.1	72.6	24.4	11.2	2.7	Naphthene	Do.
52	24.7	.855	34.0	6.3	.887-.911	28.0-23.8	4.4	.911-.924	23.8-21.6	6.1	.924-.938	21.6-19.4	76.0	21.0	11.9	2.5	do	Do.
53	10.2	.887	28.0	7.7	.909-.935	24.2-19.8	5.4	.935-.949	19.8-17.6	19.9	.949-.971	17.6-14.2	43.2	53.8	16.6	8.9	do	Do.
54	23.7	.874	30.4	7.2	.909-.926	24.2-21.3	4.7	.926-.936	21.3-19.7	14.4	.936-.958	19.7-16.2	59.6	37.4	11.4	4.3	do	Do.
55	26.7	.870	31.1	8.3	.907-.932	24.5-20.3	4.1	.932-.936	20.3-19.7	11.9	.936-.963	19.7-15.4	58.1	38.9	11.1	4.3	do	Do.
56	15.4	.880	29.3	7.4	.909-.937	24.2-19.5	6.0	.937-.952	19.5-17.1	16.3	.952-.971	17.1-14.2	45.1	51.9	12.8	6.6	do	Do.
57	18.6	.869	31.3	6.5	.907-.932	24.5-20.3	4.6	.932-.947	20.3-17.9	10.9	.947-.963	17.9-15.4	53.6	43.4	17.8	7.7	do	L. G. Marsh.
58	21.0	.859	33.2	7.9	.884-.906	28.6-24.7	6.4	.906-.919	24.7-22.5	5.0	.919-.929	22.5-20.8	55.0	42.0	18.6	7.8	Hybrid	F. W. Lane.
59	12.8	.868	31.5	6.0	.897-.918	26.3-22.6	7.1	.918-.942	22.6-18.7	13.5	.942-.964	18.7-15.3	47.7	49.3	17.1	8.4	Naphthene	L. G. Marsh.
60	20.3	.848	35.4	8.9	.870-.898	31.1-26.1	2.9	.898-.907	26.1-24.5	4.4	.907-.919	24.5-22.5	78.5	18.5	10.1	1.9	Intermediate	H. M. Smith.
61	30.8	.850	35.0	10.2	.875-.897	30.2-26.3	4.8	.897-.908	26.3-24.3	5.8	.908-.921	24.3-22.1	70.4	26.6	10.3	2.7	do	Do.
62	21.2	.856	33.8	6.6	.893-.916	27.0-23.0	4.5	.916-.929	23.0-20.8	5.7	.929-.943	20.8-18.6	59.8	37.2	15.5	5.8	Hybrid	L. G. Marsh.
63	29.5	.860	33.0	7.4	.899-.923	25.9-21.8	3.6	.923-.936	21.8-19.7	12.4	.936-.945	19.7-18.2	66.0	31.0	12.5	3.9	Naphthene	H. M. Smith.
64	23.3	.878	29.7	7.7	.920-.944	22.3-18.4	4.1	.944-.953	18.4-17.0	11.7	.953-.972	17.0-14.1	55.1	41.9	12.3	5.2	do	Do.
65	18.9	.853	34.4	7.4	.876-.900	30.0-25.7	4.6	.900-.915	25.7-23.1	5.4	.915-.929	23.1-20.8	74.4	22.6	9.9	2.2	Intermediate	Do.
66	16.9	.848	35.4	8.7	.871-.899	31.0-25.9	7.0	.899-.915	25.9-23.1	2.1	.915-.922	23.1-22.0	64.7	32.3	15.5	5.0	do	Do.
67	14.8	.873	30.6	6.6	.913-.939	23.5-19.2	5.5	.939-.956	19.2-16.5	13.1	.956-.978	16.5-13.2	40.0	57.0	14.1	8.0	Naphthene	Do.
68	21.5	.853	34.4	10.0	.884-.911	28.6-23.8	5.1	.911-.921	23.8-22.1	4.3	.921-.930	22.1-20.7	55.5	41.5	15.1	6.3	Intermediate	I. H. Nelson.
69	17.2	.847	35.6	8.5	.873-.898	30.6-26.1	4.9	.898-.911	26.1-23.8	4.5	.911-.923	23.8-21.8	68.1	28.9	15.1	4.4	do	L. G. Marsh.
70	8.1	.843	36.4	1.8	.857-.877	33.6-29.9							90.2	6.8			do	Do.
71													86.2	10.8			do	H. M. Smith.

[17] See pp. 7 to 10, this report.
[20] See pp. 34-35, Bull. 207, and pp. 86-89, Tech. Paper 323B.

[21] See p. 8, this report.
[22] See "Acknowledgments."

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Summary—Continued																	
	Gas oil			Nonviscous lubricating distillate			Medium lubricating distillate			Viscous lubricating distillate				Residuum				
	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Total distillate	Per cent	Carbon residue (per cent)	Carbon residue in crude (per cent)	Base of crude	Analyst
86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
California—Con.																		
72	29.7	0.858	33.4	7.2	0.891-0.916	27.3-23.0	3.3	0.916-0.923	23.0-21.8	9.8	0.923-0.953	21.8-17.0	62.2	34.8	11.0	3.8	Naphthene	H. M. Smith.
73	22.4	.872	30.8	9.4	.901- .924	25.6-21.6	4.1	.924- .935	21.6-19.8	6.3	.935- .949	19.8-17.6	50.4	46.6	14.5	6.8	Hybrid	L. G. Marsh.
Colorado																		
74	13.7	.843	36.4	14.1	.849- .880	35.2-29.3	10.0	.880- .902	29.3-25.4	----	----	----	61.2	35.8	6.0	2.2	Paraffin	M. B. Cooke.
75	18.6	.844	36.2	13.7	.857- .877	33.6-29.9	7.1	.877- .889	29.9-27.7	----	----	----	75.0	22.0	3.1	.7	Intermediate	L. P. Calkin.
76	10.9	.847	35.6	12.3	.852- .872	34.6-30.8	6.1	.872- .887	30.8-28.0	----	----	----	84.5	12.5	2.0	.3	Paraffin	Do.
Illinois																		
77	16.5	.846	35.8	11.1	.862- .885	32.7-28.4	7.1	.885- .899	28.4-25.9	----	----	----	59.6	37.4	10.6	4.0	Intermediate	D. D. Stark.
Indiana																		
78	12.4	.846	35.8	8.9	.858- .880	33.4-29.3	6.6	.880- .889	29.3-27.7	----	----	----	73.1	23.9	6.0	1.4	Paraffin	Do.
Kansas																		
79	15.1	.843	36.4	12.1	.858- .878	33.4-29.7	9.5	.878- .901	29.7-25.6	----	----	----	63.8	33.2	8.6	2.9	Intermediate	M. B. Cooke.
80	23.4	.848	35.4	11.6	.872- .896	30.8-26.4	7.2	.896- .909	26.4-24.2	----	----	----	72.7	24.3	10.2	2.5	do	Do.
81	14.6	.849	35.2	9.8	.864- .888	32.3-27.9	6.3	.888- .898	27.9-26.1	----	----	----	73.0	24.0	9.8	2.4	do	Do.
82	14.6	.854	34.2	13.6	.867- .891	31.7-27.3	9.3	.891- .904	27.3-25.0	.9	.904- .906	25.0-24.7	65.7	31.3	10.4	3.3	do	Do.
83	18.6	.853	34.4	11.6	.871- .896	31.0-26.4	6.9	.896- .915	26.4-23.1	----	----	----	79.6	17.4	10.8	1.9	do	Do.
84	17.2	.849	35.2	11.2	.868- .894	31.5-26.8	7.8	.894- .907	26.8-24.5	----	----	----	76.7	20.3	11.5	2.3	do	M. J. Eames.
85	15.9	.849	35.2	10.8	.863- .885	32.5-28.4	8.6	.885- .904	28.4-25.0	----	----	----	73.3	23.7	7.4	1.8	do	M. B. Cooke

86	15.5	.853	34.4	11.1	.868-.891	31.5-27.3	8.4	.891-.906	27.3-24.7	.9	.906-.908	24.7-24.3	65.8	31.2	11.8	3.7	do	Do.
87	15.6	.854	34.2	10.1	.869-.892	31.3-27.1	6.3	.892-.905	27.1-24.9	4.1	.905-.913	24.9-23.5	67.7	29.3	9.4	2.8	do	Do.
88	24.0	.844	36.2	12.2	.865-.893	32.1-27.0	8.5	.893-.906	27.0-24.7	----	----	----	75.1	21.9	10.5	2.3	do	Do.
89	16.5	.849	35.2	10.2	.862-.887	32.7-28.0	7.5	.887-.904	28.0-25.0	1.1	.904-.906	25.0-24.7	72.0	25.0	8.5	2.1	do	Do.
90	13.7	.868	31.5	13.4	.883-.902	28.8-25.4	6.6	.902-.915	25.4-23.1	7.2	.915-.930	23.1-20.7	43.0	54.0	13.0	7.0	Hybrid	Do.
91	14.6	.838	37.4	10.2	.860-.883	33.0-28.8	6.8	.883-.900	28.8-25.7	----	----	----	70.9	26.1	7.4	1.9	Intermediate	Do.
92	14.0	.847	35.6	10.0	.862-.887	32.7-28.0	6.9	.887-.901	28.0-25.6	.5	.901-.902	25.6-25.4	64.7	32.3	11.8	3.8	do	Do.
93	13.1	.850	35.0	10.2	.868-.896	31.5-26.4	7.5	.896-.907	26.4-24.5	1.7	.907-.909	24.5-24.2	60.5	36.5	16.1	5.9	do	Do.
94	16.1	.848	35.4	11.9	.866-.884	31.9-28.6	8.3	.884-.903	28.6-25.2	----	----	----	75.3	21.7	8.7	1.9	do	Do.
95	14.7	.849	35.2	11.2	.866-.890	31.9-27.5	8.4	.890-.904	27.5-25.0	----	----	----	63.7	33.3	10.7	3.6	do	Do.
96	22.4	.854	34.2	14.0	.873-.890	30.6-27.5	9.3	.890-.901	27.5-25.6	1.9	.901-.904	25.6-25.0	65.2	31.8	8.0	2.5	do	Do.
97	9.2	.851	34.8	8.4	.858-.883	33.4-28.8	4.4	.883-.895	28.8-26.6	----	----	----	84.1	12.9	9.6	1.2	Paraffin	Do.
98	11.6	.852	34.6	10.0	.866-.892	31.9-27.1	6.6	.892-.904	27.1-25.0	.5	.904-.905	25.0-24.9	60.1	36.9	18.6	6.9	Intermediate	Do.
99	14.6	.848	35.4	10.0	.863-.886	32.5-28.2	5.7	.886-.898	28.2-26.1	----	----	----	74.3	22.7	8.2	1.9	do	Do.
100	15.9	.847	35.6	11.1	.863-.884	32.5-28.6	6.5	.884-.903	28.6-25.2	----	----	----	76.1	20.9	6.7	1.4	do	Do.
101	20.8	.844	36.2	11.2	.864-.887	32.3-28.0	5.7	.887-.899	28.0-25.9	2.6	.899-.903	25.9-25.2	60.0	37.0	12.6	4.7	do	Do.
102	19.4	.847	35.6	12.9	.867-.887	31.7-28.0	8.2	.887-.905	28.0-24.9	.6	.905-.906	24.9-24.7	64.9	32.1	12.1	3.9	do	Do.
103	13.8	.851	34.8	10.2	.866-.884	31.9-28.6	7.3	.884-.904	28.6-25.0	----	----	----	58.1	38.9	9.8	3.8	do	Do.
104	31.1	.846	35.8	14.9	.864-.887	32.3-28.0	9.4	.887-.901	28.0-25.6	----	----	----	63.2	33.8	10.4	3.5	do	Do.
Kentucky																		
105	17.0	.845	36.0	7.9	.860-.884	33.0-28.6	8.9	.884-.894	28.6-26.8	----	----	----	75.8	21.2	7.5	1.6	Intermediate	D. D. Stark.
106	15.1	.844	36.2	9.6	.857-.874	33.6-30.4	7.8	.874-.887	30.4-28.0	----	----	----	74.2	22.8	5.3	1.2	do	M. B. Cooke.
107	15.6	.848	35.4	14.3	.858-.876	33.4-30.0	7.0	.876-.887	30.0-28.0	----	----	----	66.5	30.5	6.5	2.0	do	D. D. Stark.
108	13.5	.834	38.2	9.2	.852-.881	34.6-29.1	8.3	.881-.905	29.1-24.9	----	----	----	75.3	21.7	5.5	1.2	do	A. D. Bauer.
109	11.3	.842	36.6	12.1	.850-.867	35.0-31.7	7.4	.867-.876	31.7-30.0	----	----	----	66.5	30.5	5.7	1.7	Paraffin	Do.
110	12.7	.845	36.0	11.8	.859-.885	33.2-28.4	6.0	.885-.900	28.4-25.7	1.9	.900-.904	25.7-25.0	54.3	42.7	17.7	7.6	Intermediate	M. B. Cooke.
111	15.9	.849	35.2	7.7	.859-.887	33.2-28.0	7.7	.887-.899	28.0-25.9	----	----	----	76.4	20.6	8.4	1.7	do	D. D. Stark.
112	11.2	.845	36.0	8.4	.868-.890	31.5-27.5	9.6	.890-.917	27.5-22.8	1.4	.917-.921	22.8-22.1	70.3	26.7	9.6	2.6	do	A. D. Bauer.
113	19.4	.852	34.6	12.0	.863-.891	32.5-27.3	6.7	.891-.902	27.3-25.4	----	----	----	79.7	17.3	6.4	1.1	do	E. O. Smith.
Louisiana																		
114	34.8	.881	29.1	14.6	.909-.920	24.2-22.3	8.0	.920-.928	22.3-21.0	16.1	.928-.944	21.0-18.4	73.5	23.5	7.9	1.9	Naphthene	M. B. Cooke.
115	10.8	.842	36.6	8.7	.856-.882	33.8-28.9	4.4	.882-.904	28.9-25.0	----	----	----	87.6	9.4	5.2	.5	Paraffin	Do.
116	11.2	.842	36.6	12.9	.848-.875	35.4-30.2	6.0	.875-.883	30.2-28.8	----	----	----	74.7	22.3	9.2	2.1	do	Do.
117	9.4	.840	37.0	10.0	.851-.873	34.8-30.6	6.8	.873-.890	30.6-27.5	----	----	----	83.8	13.2	7.3	1.0	do	Do.
118	27.8	.850	35.0	20.5	.854-.871	34.2-31.0	10.4	.871-.877	31.0-29.9	----	----	----	60.6	36.4	6.7	2.4	Intermediate	L. P. Calkin.
119	25.9	.879	29.5	15.0	.896-.914	26.4-23.3	8.0	.914-.935	23.3-19.8	14.2	.935-.972	19.8-14.1	63.1	33.9	9.8	3.3	Naphthene	A. D. Bauer.
120	33.7	.849	35.2	15.9	.866-.888	31.9-27.9	8.6	.888-.915	27.9-23.1	----	----	----	71.7	25.3	8.0	2.0	Intermediate	M. B. Cooke.
121	9.0	.854	34.2	10.1	.860-.882	33.0-28.9	7.3	.882-.898	28.9-26.1	----	----	----	73.1	23.9	8.2	2.0	Paraffin	Do.
122	40.5	.880	29.3	12.4	.909-.922	24.2-22.0	7.5	.922-.929	22.0-20.8	13.6	.929-.944	20.8-18.4	74.0	23.0	7.0	1.6	Naphthene	A. D. Bauer.
123	29.9	.871	31.0	16.1	.895-.902	26.6-25.4	8.1	.902-.909	25.4-24.2	3.4	.909-.912	24.2-23.7	61.5	35.5	5.1	1.8	Hybrid	M. B. Cooke.
124	22.9	.884	28.6	13.8	.913-.935	23.5-19.8	8.2	.935-.945	19.8-18.2	16.8	.945-.962	18.2-15.6	61.7	35.3	8.0	2.8	Naphthene	A. D. Bauer.
Montana																		
125	----	----	----	----	----	----	----	----	----	----	----	----	86.0	11.0	----	----	Paraffin	I. H. Nelson.
126	----	----	----	----	----	----	----	----	----	----	----	----	88.1	8.9	----	----	do	Do.
127	19.3	.863	32.5	11.7	.894-.910	26.8-24.0	7.2	.910-.918	24.0-22.6	4.1	.918-.923	22.6-21.8	68.4	28.6	7.0	2.0	Intermediate	L. P. Calkin.
128	16.1	.862	32.7	12.7	.886-.911	28.2-23.8	9.5	.911-.920	23.8-22.3	----	----	----	71.7	25.3	6.7	1.7	do	Do.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Summary—Continued																	
	Gas oil			Nonviscous lubricating distillate			Medium lubricating distillate			Viscous lubricating distillate			Total distillate	Residuum		Carbon residue in crude (per cent)	Base of crude	Analyst
	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)		Per cent	Carbon residue (per cent)			
86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
New Mexico																		
129	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	82.9	14.1	-----	-----	Paraffin	C. E. Reistle.
New York																		
130	11.2	0.839	37.2	11.1	0.846–0.867	35.8–31.7	5.6	0.867–0.880	31.7–29.3	-----	-----	-----	75.4	21.6	2.9	0.6	Paraffin	D. D. Stark.
Ohio																		
131	8.7	.835	38.0	10.7	.841– .865	36.8–32.1	7.1	.865– .876	32.1–30.0	-----	-----	-----	71.3	25.7	7.4	1.9	Paraffin	D. D. Stark.
132	10.8	.856	33.8	7.0	.876– .893	30.0–27.0	6.6	.893– .907	27.0–24.5	5.4	0.907–0.911	24.5–23.8	29.8	67.2	1.6	1.1	Naphthene	I. H. Nelson.
133	12.0	.846	35.8	7.6	.861– .880	32.8–29.3	6.5	.880– .898	29.3–26.1	-----	-----	-----	76.3	20.7	6.2	1.3	Paraffin	D. D. Stark.
134	20.6	.837	37.6	7.5	.851– .881	34.8–29.1	6.7	.881– .895	29.1–26.6	-----	-----	-----	74.2	22.8	6.3	1.4	Intermediate	Do.
135	14.1	.836	37.8	7.4	.849– .862	35.2–23.7	6.5	.862– .872	32.7–30.8	-----	-----	-----	81.7	15.3	3.1	.5	Paraffin	Do.
Oklahoma																		
136	13.7	.854	34.2	10.2	.872– .895	30.8–26.6	12.8	.895– .909	26.6–24.2	-----	-----	-----	69.4	27.6	14.9	4.1	Intermediate	A. D. Bauer.
137	23.5	.846	35.8	12.4	.871– .892	31.0–27.1	7.2	.892– .910	27.1–24.0	.8	.910– .912	24.0–23.7	71.2	25.8	8.5	2.2	do	M. B. Cooke.
138	7.9	.839	37.2	7.8	.842– .863	36.6–32.5	5.3	.863– .879	32.5–29.5	-----	-----	-----	85.0	12.0	2.2	.3	Paraffin	Do.
139	13.6	.844	36.2	10.5	.860– .879	33.0–29.5	5.7	.879– .892	29.5–27.1	1.5	.892– .895	27.1–26.6	79.7	17.3	4.3	.7	Intermediate	A. D. Bauer.
140	22.0	.853	34.4	13.2	.872– .892	30.8–27.1	8.4	.892– .903	27.1–25.2	3.3	.903– .908	25.2–24.3	71.6	25.4	8.1	2.1	do	Do.
141	20.6	.842	36.6	12.3	.857– .880	33.6–29.3	8.4	.880– .895	29.3–26.6	.4	.895– .896	26.6–26.4	71.8	25.2	5.2	1.3	do	I. H. Nelson.
142	13.3	.849	35.2	10.0	.865– .889	32.1–27.7	5.8	.889– .894	27.7–26.8	2.0	.894– .896	26.8–26.4	70.8	26.2	6.0	1.6	do	A. D. Bauer.
143	16.4	.852	34.6	10.8	.867– .886	31.7–28.2	7.8	.886– .900	28.2–25.7	.7	.900– .901	25.7–25.6	76.1	20.9	5.3	1.1	do	F. W. Lane.
144	15.2	.849	35.2	10.8	.864– .886	32.3–28.2	4.6	.886– .895	28.3–26.6	-----	-----	-----	83.1	13.9	3.6	.5	do	M. B. Cooke.

145	14.1	.845	36.0	9.8	.861-.881	32.8-29.1	6.6	.881-.908	29.1-24.3				79.1	17.9	7.8	1.4	do	Do.
146	10.6	.850	35.0	12.4	.855-.876	34.0-30.0	8.3	.876-.881	30.0-29.1				75.0	22.0	3.2	.7	Paraffin	A. D. Bauer.
147	14.8	.845	36.0	9.8	.863-.890	32.5-27.5	5.1	.890-.902	27.5-25.4	.9	.902-.904	25.4-25.0	81.4	15.6	7.6	1.2	Intermediate	Do.
148	14.1	.849	35.2	12.0	.864-.887	32.3-28.0	7.6	.887-.901	28.0-25.6				71.6	25.4	6.2	1.6	do	Do.
149	10.5	.845	36.0	12.0	.850-.875	35.0-30.2	6.0	.875-.890	30.2-27.5				81.8	15.2	3.8	.6	Paraffin	L. P. Calkin.
150	14.0	.845	36.0	11.4	.863-.882	32.5-28.9	7.2	.882-.910	28.9-24.0	1.3	.910-.916	24.0-23.0	74.6	22.4	6.2	1.4	Intermediate	A. D. Bauer.
151	24.1	.849	35.2	11.6	.868-.887	31.5-28.0	10.3	.887-.903	28.0-25.2				72.1	24.9	8.2	2.0	do	M. B. Cooke.
152	11.8	.844	36.2	11.9	.853-.873	34.4-30.6	10.3	.873-.893	30.6-27.0				74.9	22.1	9.7	2.1	Paraffin	Do.
153	15.4	.840	37.0	11.8	.855-.874	34.0-30.4	8.1	.874-.887	30.4-28.0				65.4	31.6	11.0	3.5	Intermediate	L. G. Marsh.
154	16.0	.846	35.8	11.5	.861-.884	32.8-28.6	7.1	.884-.896	28.6-26.4	2.0	.896-.899	26.4-25.9	73.1	23.9	8.9	2.1	do	A. D. Bauer.
155	13.6	.846	35.8	8.0	.863-.886	32.5-28.2	8.1	.886-.907	28.2-24.5	1.0	.907-.910	24.5-24.0	74.3	22.7	7.8	1.8	do	M. B. Cooke.
156	14.3	.849	35.2	10.1	.870-.889	31.1-27.7	8.4	.889-.904	27.7-25.0				70.1	26.9	13.2	3.6	do	Do.
157	13.3	.845	36.0	9.2	.859-.881	33.2-29.1	6.4	.881-.893	29.1-27.0	1.2	.893-.895	27.0-26.6	75.4	21.6	4.2	.9	do	H. M. Smith.
158	15.6	.846	35.8	9.3	.862-.886	32.7-28.2	6.5	.886-.907	28.2-24.5				81.3	15.7	6.8	1.1	do	M. B. Cooke.
159	14.7	.845	36.0	10.5	.859-.886	33.2-28.2	8.0	.886-.897	28.2-26.3				76.2	20.8	4.5	.9	do	A. D. Bauer.
160	20.9	.846	35.8	10.9	.869-.893	31.3-27.0	9.6	.893-.912	27.0-23.7				67.9	29.1	7.4	2.2	do	M. B. Cooke.
161	21.9	.847	35.6	12.6	.868-.893	31.5-27.0	7.7	.893-.905	27.0-24.9	1.2	.905-.907	24.9-24.5	74.6	22.4	7.3	1.6	do	Do.
162	14.4	.844	36.2	9.0	.862-.883	32.7-28.8	9.4	.883-.908	28.8-24.3	1.6	.908-.912	24.3-23.7	77.4	19.6	10.6	2.1	do	Do.
163	14.0	.845	36.0	8.9	.860-.887	33.0-28.0	13.0	.887-.900	28.0-25.7				66.1	30.9	7.9	2.4	do	H. M. Smith.
164	10.7	.839	37.2	8.6	.860-.881	33.0-29.1	4.3	.881-.895	29.1-26.6				86.6	10.4	5.7	.6	do	A. D. Bauer.
165	20.3	.844	36.2	11.3	.864-.890	32.3-27.5	5.7	.890-.907	27.5-24.5	3.4	.907-.912	24.5-23.7	71.4	25.6	9.3	2.4	do	Do.
166	11.9	.844	36.2	7.8	.863-.891	32.5-27.3	8.8	.891-.903	27.3-25.2	3.0	.903-.906	25.2-24.7	66.3	30.7	9.7	3.0	do	H. M. Smith.
167	11.8	.844	36.2	7.3	.863-.888	32.5-27.9	9.0	.888-.908	27.9-24.3	4.5	.908-.917	24.3-22.8	71.3	25.7	10.5	2.8	do	Do.
168	22.7	.853	34.4	13.0	.864-.889	32.3-27.7	12.4	.889-.908	27.7-24.3	3.5	.908-.914	24.3-23.3	56.8	40.2	10.2	4.1	do	Do.
169	13.9	.850	35.0	10.1	.865-.889	32.1-27.7	8.1	.889-.902	27.7-25.4	3.1	.902-.907	25.4-24.5	67.2	29.8	9.0	2.7	do	M. B. Cooke.
170	15.9	.843	36.4	12.0	.858-.878	33.4-29.7	7.9	.878-.889	29.7-27.7				72.7	24.3	4.1	1.0	do	A. D. Bauer.
171	11.9	.846	35.8	9.4	.865-.887	32.1-28.0	8.0	.887-.909	28.0-24.2	2.4	.909-.915	24.2-23.1	67.6	29.4	10.8	3.2	do	M. B. Cooke.
172	14.0	.844	36.2	11.9	.860-.885	33.0-28.4	6.0	.885-.898	28.4-26.1				72.5	24.5	4.5	1.1	do	Do.
173	14.4	.851	34.8	12.2	.865-.888	32.1-27.9	7.6	.888-.907	27.9-24.5	5.3	.907-.921	24.5-22.1	72.8	24.2	10.3	2.5	do	A. D. Bauer.
174	15.5	.853	34.4	10.7	.868-.888	31.5-27.9	7.8	.888-.900	27.9-25.7	.5	.900-.901	25.7-25.6	78.2	18.8	4.4	.8	do	M. B. Cooke.
175	15.8	.848	35.4	10.1	.860-.882	33.0-28.9	7.2	.882-.899	28.9-25.9	.5	.899-.900	25.9-25.7	78.8	18.2	8.7	1.6	do	Do.
176	19.0	.848	35.4	11.8	.873-.890	30.6-27.5	7.5	.890-.903	27.5-25.2	3.0	.903-.908	25.2-24.3	60.6	36.4	10.5	3.8	do	A. D. Bauer.
177	14.3	.840	37.0	12.1	.854-.876	34.2-30.0	8.0	.876-.895	30.0-26.6				74.4	22.6	2.6	.6	do	Do.
178													96.0				Paraffin	M. B. Cooke.
179	9.9	.850	35.0	11.0	.856-.875	33.8-30.2	5.5	.875-.889	30.2-27.7				81.2	15.8	4.7	.7	do	Do.
180	18.8	.845	36.0	10.6	.868-.889	31.5-27.7	6.6	.889-.901	27.7-25.6	1.7	.901-.904	25.6-25.0	70.7	26.3	8.6	2.3	Intermediate	A. D. Bauer.
181	17.6	.843	36.4	13.2	.855-.876	34.0-30.0	9.1	.876-.889	30.0-27.7				70.7	26.3	3.7	1.0	do	Do.
182	11.1	.846	35.8	14.3	.853-.871	34.4-31.0	9.6	.871-.882	31.0-28.9				69.6	27.4	3.0	.8	Paraffin	Do.
183	17.0	.846	35.8	8.7	.869-.884	31.3-28.6	6.2	.884-.898	28.6-26.1	5.5	.898-.911	26.1-23.8	69.5	27.5	9.9	2.7	do	M. B. Cooke.
184	16.1	.850	35.0	11.4	.863-.884	32.5-28.6	7.9	.884-.897	28.6-26.3	.7	.897-.898	26.3-26.1	75.3	21.7	7.5	1.6	do	A. D. Bauer.
185	17.3	.852	34.6	11.0	.868-.895	31.5-26.6	5.3	.895-.902	26.6-25.4	3.6	.902-.907	25.4-24.5	76.6	20.4	4.6	.9	do	M. B. Cooke.
186	12.2	.842	36.6	9.5	.855-.876	34.0-30.0	6.3	.876-.890	30.0-27.5				78.1	18.9	3.1	.6	Intermediate	A. D. Bauer.
187	15.7	.849	35.2	11.1	.864-.886	32.3-28.2	6.0	.886-.905	28.2-24.9				85.1	11.9	5.2	.6	do	M. B. Cooke.
188	14.0	.848	35.4	10.6	.867-.888	31.7-27.9	6.8	.888-.902	27.9-25.4				67.8	29.2	7.5	2.2	do	Do.
189	15.7	.844	36.2	9.1	.862-.886	32.7-28.2	6.0	.886-.913	28.2-23.5	.9	.913-.917	23.5-22.8	76.8	20.2	10.3	2.1	do	L. P. Calkin.
190	9.5	.852	34.6	8.9	.858-.878	33.4-29.7	6.1	.878-.895	29.7-26.6				81.6	15.4	4.4	.7	Paraffin	H. M. Smith.
191	22.4	.850	35.0	12.7	.870-.895	31.1-26.6	9.3	.895-.909	26.6-24.2	1.4	.909-.910	24.2-24.0	71.6	25.4	7.5	1.9	Intermediate	A. D. Bauer.
192	16.1	.849	35.2	8.5	.871-.895	31.0-26.6	7.1	.895-.907	26.6-24.5	4.8	.907-.915	24.5-23.1	63.9	33.1	13.2	4.4	do	Do.
193	14.9	.848	35.4	8.9	.864-.884	32.3-28.6	5.2	.884-.898	28.6-26.1				84.2	12.8	4.8	.6	do	C. E. Reistle.
194	15.8	.846	35.8	9.3	.860-.882	33.0-28.9	4.5	.882-.892	28.9-27.1				83.8	13.2	5.3	.7	do	Do.
195	16.8	.846	35.8	11.0	.864-.890	32.3-27.5	4.8	.890-.906	27.5-24.7				85.2	11.8	4.0	.5	do	L. P. Calkin.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Summary—Continued																	
	Gas oil			Nonviscous lubricating distillate			Medium lubricating distillate			Viscous lubricating distillate				Residuum				
	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Total distillate	Per cent	Carbon residue (per cent)	Carbon residue in crude (per cent)	Base of crude	Analyst
86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
Oklahoma— Continued																		
196	14.7	0.842	36.6	12.3	0.857–0.887	33.6–28.0	8.9	0.887–0.900	28.0–25.7	1.1	0.900–0.902	25.7–25.4	65.1	31.9	6.3	2.0	Intermediate.	A. D. Bauer.
197	15.5	.845	36.0	9.2	.868– .890	31.5–27.5	5.9	.890– .910	27.5–24.0	1.3	.910– .914	24.0–23.3	70.8	26.2	11.7	3.1	do	M. B Cooke.
198	15.5	.855	34.0	10.3	.867– .892	31.7–27.1	6.0	.892– .902	27.1–25.4				85.1	11.9	4.9	.6	do	L. P. Calkin.
199	14.4	.848	35.4	11.8	.863– .886	32.5–28.2	6.8	.886– .897	28.2–26.3	2.0	.897– .901	26.3–25.6	64.0	33.0	10.8	3.6	do	I. H. Nelson.
200	17.7	.854	34.2	9.9	.872– .898	30.8–26.1	6.2	.898– .909	26.1–24.2	4.6	.909– .917	24.2–22.8	52.7	44.3	12.3	5.4	do	H. M. Smith.
201	20.8	.847	35.6	10.0	.867– .888	31.7–27.9	6.6	.888– .900	27.9–25.7	2.6	.900– .907	25.7–24.5	67.1	29.9	11.1	3.3	do	A. D. Bauer.
Pennsylvania																		
202	11.5	.828	39.4	17.8	.833– .856	38.4–33.8	2.0	.856– .859	33.8–33.2				71.9	25.1	.6	.2	Paraffin	N. F. Le Jeune.
203	9.6	.832	38.6	11.2	.838– .858	37.4–33.4	3.8	.858– .862	33.4–32.7				82.6	14.4	1.6	.2	do	D. D. Stark.
204	13.5	.837	37.6	10.9	.845– .864	36.0–32.3	3.8	.864– .870	32.3–31.1				75.9	21.1	1.6	.3	do	Do.
205	13.9	.839	37.2	8.2	.851– .861	34.8–32.8	5.0	.861– .872	32.8–30.8				80.9	16.1	3.2	.5	do	Do.
206	9.8	.840	37.0	11.0	.844– .863	36.2–32.5	4.9	.863– .872	32.5–30.8				76.0	21.0	2.6	.5	do	Do.
207	7.6	.830	39.0	11.3	.859– .866	33.2–31.9	4.3	.866– .876	31.9–30.0				75.2	21.8	2.1	.5	do	Do.
208	13.7	.827	39.6	12.3	.836– .864	37.8–32.3	5.8	.864– .879	32.3–29.5				72.6	24.4	2.0	.5	do	Do.
209	29.9	.845	36.0	13.4	.852– .874	34.6–30.4	10.4	.874– .878	30.4–29.7				59.7	37.3	2.2	.8	Intermediate.	Do.
Texas																		
210	14.8	.840	37.0	10.9	.857– .873	33.6–30.6	3.8	.873– .879	30.6–29.5				68.4	28.6	8.0	2.3	Intermediate.	L. P. Calkin.
211	18.6	.854	34.2	8.0	.885– .906	24.8–24.9	4.7	.906– .912	24.9–23.7	5.9	.912– .918	23.7–22.6	73.7	23.3	5.6	1.3	Naphthene	M. B. Cooke.
212	34.9	.876	30.0	11.4	.908– .920	24.3–22.3	8.2	.920– .928	22.3–21.0	8.1	.928– .939	21.0–19.2	70.8	26.2	6.4	1.7	do	Do.
213	21.8	.883	28.8	11.4	.922– .937	22.0–19.5	7.6	.937– .947	19.5–17.9	18.1	.947– .968	17.9–14.7	58.9	38.1	5.3	2.0	do	Do.

214	23.7	.867	31.7	12.7	.896–.909	26.4–24.2	5.9	.909–.927	24.2–21.1	11.2	.927–.960	21.1–15.9	69.7	27.3	6.4	1.7	do	Do.
215	16.9	.851	34.8	10.0	.866–.890	31.9–27.5	6.8	.890–.905	27.5–24.9	-----	-----	-----	76.1	20.9	5.3	1.1	Intermediate	Do.
216	15.5	.851	34.8	13.5	.872–.899	30.8–25.9	6.0	.899–.905	25.9–24.9	2.3	.905–.908	24.9–24.3	73.0	24.0	5.3	1.3	do	Do.
217	14.7	.848	35.4	9.1	.863–.888	32.5–27.9	6.6	.888–.915	27.9–23.1	.6	.915–.917	23.1–22.8	79.0	18.0	11.0	2.0	do	Do.
218	15.7	.839	37.2	11.2	.849–.871	35.2–31.0	7.1	.871–.891	31.0–27.3	-----	-----	-----	77.4	19.6	5.2	1.0	do	Do.
219	13.8	.834	38.2	8.8	.841–.862	36.8–32.7	3.9	.862–.875	32.7–30.2	-----	-----	-----	89.7	7.3	7.4	.5	Paraffin	N. F. Le Jeune.
220	16.6	.846	35.8	11.1	.862–.883	32.7–28.8	6.3	.883–.897	28.8–26.3	-----	-----	-----	82.3	14.7	6.8	1.0	Intermediate	I. H. Nelson.
221	15.8	.840	37.0	8.5	.856–.881	33.8–29.1	7.2	.881–.895	29.1–26.6	2.1	.895–.898	26.6–26.1	78.2	18.8	7.6	1.4	do	H. M. Smith.
222	21.7	.852	34.6	14.0	.865–.886	32.1–28.2	10.0	.886–.898	28.2–26.1	4.1	.898–.901	26.1–25.6	69.2	27.8	8.8	2.4	do	Do.
223	36.9	.886	28.2	14.9	.915–.933	23.1–20.2	8.4	.933–.939	20.2–19.2	14.1	.939–.948	19.2–17.8	74.3	22.7	3.1	.7	Naphthene	A. D. Bauer.
224	30.7	.886	28.2	16.4	.913–.933	23.5–20.2	6.0	.933–.940	20.2–19.0	17.5	.940–.965	19.0–15.1	76.4	20.6	5.0	1.0	do	M. B. Cooke.
225	17.6	.847	35.6	10.4	.862–.888	32.7–27.9	6.4	.888–.897	27.9–26.3	2.5	.897–.901	26.3–25.6	79.3	17.7	3.7	.7	Intermediate	Do.
226	13.7	.841	36.8	9.8	.863–.893	32.5–27.0	7.0	.893–.903	27.0–25.2	-----	-----	-----	77.8	19.2	12.9	2.5	do	W. B. Lerch.
227	15.2	.848	35.4	8.5	.869–.892	31.3–27.1	4.7	.892–.903	27.1–25.2	-----	-----	-----	76.9	20.1	9.7	1.9	do	Do.
228	14.4	.845	36.0	8.9	.863–.885	32.5–28.4	5.1	.885–.899	28.4–25.9	-----	-----	-----	74.7	22.3	8.5	1.9	do	Do.
229	28.5	.887	28.0	14.2	.911–.926	23.8–21.3	8.3	.926–.935	21.3–19.8	15.3	.935–.952	19.8–17.1	66.3	30.7	5.5	1.7	Naphthene	A. D. Bauer.
230	36.0	.882	28.9	14.2	.914–.924	23.3–21.6	7.4	.924–.930	21.6–20.7	14.7	.930–.943	20.7–18.6	72.3	24.7	5.9	1.5	do	Do.
231	39.2	.876	30.0	13.7	.909–.919	24.2–22.5	7.5	.919–.928	22.5–21.0	11.2	.928–.961	21.0–15.7	71.6	25.4	5.4	1.4	do	Do.
232	51.7	.872	30.8	13.2	.900–.915	25.7–23.1	7.4	.915–.927	23.1–21.1	7.1	.927–.943	21.1–18.6	79.4	17.6	4.5	.8	do	M. B. Cooke.
233	14.8	.847	35.6	9.1	.865–.894	32.1–26.8	5.4	.894–.910	26.8–24.0	1.5	.910–.916	24.0–23.0	79.5	17.5	10.6	1.9	Intermediate	Do.
234	27.3	.858	33.4	10.4	.886–.905	28.2–24.9	7.0	.905–.918	24.9–22.6	7.7	.918–.932	22.6–20.3	79.0	18.0	6.7	1.2	Hybrid	Do.
235	22.0	.871	31.0	11.1	.901–.916	25.6–23.0	6.6	.916–.924	23.0–21.6	15.6	.924–.945	21.6–18.2	59.1	37.9	8.3	3.1	Naphthene	Do.
236	24.8	.885	28.4	3.2	.912–.918	23.7–22.6	20.0	.918–.947	22.6–17.9	17.1	.947–.961	17.9–15.7	65.1	31.9	6.2	2.0	do	D. D. Stark.
237	24.9	.882	28.9	14.4	.913–.931	23.5–20.5	7.7	.931–.942	20.5–18.7	10.6	.942–.962	18.7–15.6	61.3	35.7	8.0	2.9	do	M. B. Cooke.
238	15.7	.844	36.2	9.4	.859–.879	33.2–29.5	6.1	.879–.893	29.5–27.0	.6	.893–.894	27.0–26.8	82.2	17.8	6.9	1.2	Intermediate	I. H. Nelson.
239	15.3	.844	36.2	11.0	.867–.886	31.7–28.2	4.8	.886–.891	28.2–27.3	2.6	.891–.895	27.3–26.6	75.9	21.1	5.7	1.2	do	W. B. Lerch.
240	14.2	.848	35.4	8.2	.864–.886	32.3–28.2	7.1	.886–.909	28.2–24.2	4.4	.909–.924	24.2–21.6	80.8	16.2	8.9	1.4	do	M. B. Cooke.
241	13.6	.847	35.6	9.4	.865–.894	32.1–26.8	7.9	.894–.906	26.8–24.7	-----	-----	-----	72.6	24.4	13.2	3.2	do	Do.
242	26.2	.843	36.4	18.2	.853–.874	34.4–30.4	6.8	.874–.884	30.4–28.6	-----	-----	-----	65.9	31.1	6.8	2.1	do	Do.
243	20.5	.845	36.0	-----	-----	-----	-----	-----	-----	-----	-----	-----	80.0	17.0	-----	-----	do	Do.
244	14.8	.844	36.2	12.5	.852–.879	34.6–29.5	7.2	.879–.902	29.5–25.4	-----	-----	-----	80.2	16.8	9.9	1.7	Paraffin	Do.
245	49.8	.893	27.0	14.0	.915–.931	23.1–20.5	4.5	.931–.941	20.5–18.9	14.8	.941–.969	18.9–14.5	83.1	13.9	4.7	.7	Naphthene	Do.
246	16.1	.846	35.8	10.1	.862–.885	32.7–28.4	6.0	.885–.904	28.4–25.0	-----	-----	-----	77.9	19.1	6.1	1.2	Intermediate	I. H. Nelson.
247	19.5	.877	29.9	14.9	.891–.905	27.3–24.9	12.6	.905–.915	24.9–23.1	8.8	.915–.921	23.1–22.1	55.8	41.2	7.4	3.0	Naphthene	N. F. Le Jeune.
248	45.5	.884	28.6	11.8	.924–.937	21.6–19.5	7.2	.937–.939	19.5–19.2	8.6	.939–.942	19.2–18.7	82.9	14.1	3.3	.5	Hybrid	D. D. Stark.
249	16.4	.842	36.6	10.9	.856–.878	33.8–29.7	6.2	.878–.895	29.7–26.6	-----	-----	-----	80.1	16.9	6.5	1.1	Intermediate	I. H. Nelson.
250	31.9	.869	31.3	13.6	.896–.911	26.4–23.8	9.7	.911–.926	23.8–21.3	8.0	.926–.930	21.3–20.7	63.2	33.8	8.0	2.7	Hybrid	M. B. Cooke.
251	8.0	.840	37.0	13.5	.848–.870	35.4–31.1	4.9	.870–.882	31.1–28.9	-----	-----	-----	64.8	32.2	5.1	1.6	Paraffin	H. M. Smith.
252	14.6	.844	36.2	10.4	.862–.888	32.7–27.9	6.0	.888–.907	27.9–24.5	2.1	.907–.916	24.5–23.0	79.6	17.4	10.5	1.8	Hybrid	M. B. Cooke.
253	36.2	.880	29.3	16.4	.922–.940	22.0–19.0	5.8	.940–.946	19.0–18.1	13.8	.946–.963	18.1–15.4	72.2	24.8	4.8	1.2	Naphthene	Do.
254	33.9	.870	31.1	10.8	.894–.919	26.8–22.5	9.4	.919–.948	22.5–17.8	21.9	.948–.960	17.8–15.9	76.0	21.0	9.2	1.9	do	W. B. Lerch.
255	14.8	.848	35.4	10.1	.851–.873	34.8–30.6	4.4	.873–.881	30.6–29.1	-----	-----	-----	81.7	15.3	3.2	.5	Intermediate.	Do.
256	25.4	.856	33.8	14.0	.880–.887	29.3–28.0	8.4	.887–.895	28.0–26.6	3.1	.895–.898	26.6–26.1	67.6	29.4	7.2	2.1	do	L. P. Calkin.
257	15.5	.840	37.0	9.6	.857–.884	33.6–28.6	6.2	.884–.896	28.6–26.4	4.6	.896–.902	26.4–25.4	80.3	16.7	8.3	1.4	do	H. M. Smith.
258	15.0	.846	35.8	11.4	.864–.889	32.3–27.7	6.8	.889–.904	27.7–25.0	1.0	.904–.907	25.0–24.5	77.5	19.5	3.9	.7	do	M. B. Cooke.
259	10.7	.842	36.6	9.0	.853–.877	34.4–29.9	5.4	.877–.892	29.9–27.1	2.1	.892–.898	27.1–26.1	84.3	12.7	10.2	1.3	Paraffin	N. F. Le Jeune.
260	20.1	.841	36.8	5.5	.862–.883	32.7–28.8	7.5	.883–.894	28.8–26.8	2.1	.894–.896	26.8–26.4	79.1	17.9	9.7	1.7	Intermediate	H. M. Smith.
261	27.9	.844	36.2	15.7	.858–.879	33.4–29.5	6.2	.879–.889	29.5–27.7	-----	-----	-----	69.5	27.5	4.1	1.1	do	M. B. Cooke.
262	16.8	.883	28.8	9.0	.919–.934	22.5–20.0	8.6	.934–.950	20.0–17.5	15.3	.950–.977	17.5–13.3	49.7	47.3	11.5	5.4	Naphthene	Do.
263	42.5	.886	28.2	16.2	.911–.930	23.8–20.7	6.5	.930–.944	20.7–18.4	5.8	.944–.958	18.4–16.2	71.0	26.0	3.9	1.0	do	I. H. Nelson.
264	8.4	.851	34.8	10.4	.858–.889	33.4–27.7	5.2	.889–.904	27.7–25.0	-----	-----	-----	81.1	15.9	10.8	1.7	Paraffin	A. D. Bauer.

TABLE 1.—*Analyses of crude petroleums*—Continued

Sample No.	Summary—Continued: Gas oil			Nonviscous lubricating distillate			Medium lubricating distillate			Viscous lubricating distillate			Total distillate	Residuum		Carbon residue in crude (per cent)	Base of crude	Analyst
	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I. gravity (°)	Per cent	Specific gravity	A. P. I gravity (°)		Per cent	Carbon residue (per cent)			
86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
Texas—Con.																		
265	14.6	0.854	34.2	8.4	0.874-0.898	30.4-26.1	7.4	0.898-0.916	26.1-23.0				72.1	24.9	11.8	2.9	Intermediate	A. D. Bauer.
266	30.6	.874	30.4	10.6	.907- .927	24.5-21.1	6.0	.927- .932	21.1-20.3	9.4	0.932-0.939	20.3-19.2	73.3	23.7	5.5	1.3	Naphthene	M. B. Cooke.
267	17.1	.844	36.2	9.6	.861- .875	32.8-30.2	7.0	.875- .899	30.2-25.9				79.1	17.9	7.1	1.3	Intermediate	I. H. Nelson.
268	15.4	.842	36.6	9.5	.855- .878	34.0-29.7	6.9	.878- .895	29.7-26.6				79.4	17.6	6.7	1.2	do	Do.
269	13.9	.853	34.4	8.6	.873- .894	30.6-26.8	5.6	.894- .907	26.8-24.5				77.0	20.0	13.2	2.6	do	W. B. Lerch.
270	13.1	.848	35.4	10.3	.866- .891	31.9-27.3	4.3	.891- .901	27.3-25.6				77.9	19.1	9.0	1.7	do	Do.
271	28.5	.880	29.3	13.8	.910- .925	24.0-21.5	8.6	.925- .937	21.5-19.5	17.8	.937- .955	19.5-16.7	68.7	28.3	9.7	2.8	Naphthene	M. B. Cooke.
272	16.4	.847	35.6	13.0	.862- .882	32.7-28.9	8.2	.882- .895	28.9-26.6				75.5	21.5	4.1	.9	Intermediate	Do.
273	27.0	.880	29.3	13.6	.901- .920	25.6-22.3	7.2	.920- .928	22.3-21.0	16.0	.928- .939	21.0-19.2	63.8	33.2	6.4	2.1	Naphthene	Do.
274	14.3	.846	35.8	8.9	.867- .889	31.7-27.7	5.5	.889- .905	27.7-24.9	2.1	.905- .911	24.9-23.8	80.5	16.5	10.0	1.7	Intermediate	Do.
275	22.7	.852	34.6	9.1	.871- .893	31.0-27.0	6.1	.893- .908	27.0-24.3				80.1	16.9	8.1	1.4	do	W. B. Lerch.
276	10.4	.844	36.2	13.0	.855- .874	34.0-30.4	6.2	.874- .884	30.4-28.6				76.8	20.2	5.5	1.1	Paraffin	M. B. Cooke.
277	28.6	.886	28.2	12.0	.918- .934	22.6-20.0	7.5	.934- .945	20.0-18.2	15.9	.945- .957	18.2-16.4	64.0	33.0	9.1	3.0	Naphthene	Do.
278	44.5	.889	27.7	17.1	.913- .916	23.5-23.0	9.3	.916- .918	23.0-22.6	7.8	.918- .920	22.6-22.3	81.2	15.8	5.4	.9	do	I. H. Nelson.
279	14.7	.847	35.6	9.2	.864- .887	32.3-28.0	6.1	.887- .897	28.0-26.3	2.2	.897- .901	26.3-25.6	79.9	17.1	6.5	1.1	Intermediate	M. B. Cooke.
280	14.3	.840	37.0	11.0	.858- .883	33.4-28.8	6.6	.883- .901	28.8-25.6	2.7	.901- .909	25.6-24.2	70.0	27.0	10.9	2.9	do	Do.
Utah																		
281	15.6	.844	36.2	11.0	.855- .875	34.0-30.2	7.7	.875- .889	30.2-27.7				75.8	21.2	7.5	1.6	Intermediate	I. H. Nelson.
West Virginia																		
282	9.3	.832	38.6	9.9	.837- .859	37.6-33.2	3.7	.859- .866	33.2-31.9				81.1	15.9	1.4	.2	Paraffin	W. B. Lerch.
283	5.9	.830	39.0	8.6	.837- .854	37.6-34.2	3.3	.854- .860	34.2-33.0				82.6	14.4	1.2	.2	do	Do
284	10.3	.829	39.2	9.5	.837- .856	37.6-33.8	4.4	.856- .862	33.8-32.7				82.2	14.8	1.0	.2	do	Do.

Wyoming																		
285	12.7	.850	35.0	12.8	.860-.889	33.0-27.7	7.5	.889-.911	27.7-23.8	.3	.911-.913	23.8-23.5	65.9	31.1	5.5	1.7	Intermediate	L. P. Calkin.
286	18.0	.846	35.8	11.6	.862-.880	32.7-29.3	6.2	.880-.889	29.3-27.7				68.7	28.3	5.0	1.4	do	Do.
287	14.8	.870	31.1	8.2	.909-.934	24.2-20.0	7.8	.934-.947	20.0-17.9	4.4	.947-.951	17.9-17.3	44.1	52.9	19.2	10.2	Hybrid	I. H. Nelson.
288	11.6	.871	31.0	15.4	.874-.914	30.4-23.3	8.3	.914-.927	23.3-21.1	2.5	.927-.931	21.1-20.5	58.3	38.7	15.1	5.8	Intermediate	L. P. Calkin.
289	14.3	.857	33.6	10.5	.878-.909	29.7-24.2	9.0	.909-.933	24.2-20.2	4.5	.933-.944	20.2-18.4	59.8	37.2	18.9	7.0	do	M. B. Cooke.
290	13.2	.864	32.3	13.6	.869-.909	31.3-24.2	7.5	.909-.925	24.2-21.5	4.7	.925-.935	21.5-19.8	54.5	42.5	17.2	7.3	do	L. P. Calkin
291	20.0	.848	35.4	9.1	.868-.882	31.5-28.9	3.9	.882-.887	28.9-28.0				83.9	13.1	4.2	.6	do	Do.
292	17.4	.851	34.8	9.6	.867-.880	31.7-29.3	4.5	.880-.888	29.3-27.9				86.4	10.6	3.0	.3	do	Do.
293	11.8	.858	33.4	7.0	.875-.904	30.2-25.0	3.1	.904-.910	25.0-24.0				84.3	12.7	8.8	1.1	do	Do.
294	16.4	.836	37.8	12.3	.847-.868	35.6-31.5	7.0	.868-.884	31.5-28.6				75.9	21.1	3.9	.8	do	I. H. Nelson.
295	16.5	.845	36.0	9.4	.855-.875	34.0-30.2	4.5	.875-.887	30.2-28.0				86.3	10.7	4.6	.5	do	M. B. Cooke.
296	13.3	.860	33.0	10.5	.883-.911	28.8-23.8	6.6	.911-.924	23.8-21.6	5.1	.924-.935	21.6-19.8	60.5	36.5	14.9	5.4	do	L. P. Calkin.
297	15.5	.845	36.0	11.0	.860-.881	33.0-29.1	5.1	.881-.887	29.1-28.0				86.3	10.7	3.7	.4	do	Do.
298	12.7	.833	38.4	10.3	.839-.855	37.2-34.0	3.6	.855-.862	34.0-32.7				83.0	14.0	2.3	.3	Paraffin	M. B. Cooke.
299	16.5	.857	33.6	11.8	.884-.911	28.6-23.8	9.8	.911-.922	23.8-22.0	.4	.922-.923	22.0-21.8	65.8	31.2	16.6	5.2	Intermediate	L. P. Calkin.
300	15.4	.860	33.0	11.0	.887-.916	28.0-23.0	6.9	.916-.928	23.0-21.0	2.6	.928-.933	21.0-20.2	60.5	36.5	14.6	5.3	do	Do.
301	11.6	.843	36.4	14.0	.847-.866	35.6-31.9	1.7	.866-.868	31.9-31.5				83.7	13.3	1.2	.2	Paraffin	Do.
302	24.2	.841	36.8	17.9	.851-.870	34.8-31.1	4.4	.870-.874	31.1-30.4				75.6	21.4	1.2	.3	Intermediate	Do.
303	14.0	.840	37.0	16.6	.845-.863	36.0-32.5	2.2	.863-.866	32.5-31.9				82.6	14.4	2.0	.3	Paraffin	Do.
304	15.4	.859	33.2	13.4	.877-.908	29.9-24.3	9.4	.908-.927	24.3-21.1				59.3	37.7	15.1	5.7	Intermediate	M. B. Cooke.
305	37.8	.856	33.8	18.3	.862-.881	32.7-29.1	8.1	.881-.895	29.1-26.6				79.0	18.0	5.9	1.1	do	I. H. Nelson.
306	14.5	.854	34.2	13.2	.877-.911	29.9-23.8	7.6	.911-.926	23.8-21.3	3.0	.926-.931	21.3-20.5	55.9	41.1	17.9	7.4	do	M. B. Cooke.
307	18.0	.842	36.6	16.3	.854-.876	34.2-30.0	8.4	.876-.887	30.0-28.0				64.2	32.8	4.8	1.6	do	W. B. Lerch.
308	16.3	.850	35.0	10.9	.861-.881	32.8-29.1	6.0	.881-.892	29.1-27.1				75.9	21.1	7.5	1.6	do	Do.
309	23.0	.846	35.8	10.7	.864-.878	32.3-29.7	5.3	.878-.889	29.7-27.7				76.1	20.9	4.6	1.0	do	L. P. Calkin.
310	11.7	.847	35.6	13.4	.851-.875	34.8-30.2	6.8	.875-.891	30.2-27.3				75.6	21.4	5.5	1.2	Paraffin	M. B. Cooke.
311	23.2	.847	35.6	14.2	.857-.876	33.6-30.0	7.6	.876-.888	30.0-27.9				80.4	16.6	2.1	.4	Intermediate	Do.
312	16.7	.876	30.0	9.8	.910-.934	24.0-20.0	8.8	.934-.946	20.0-18.1	5.7	.946-.953	18.1-17.0	51.4	45.6	22.1	10.1	Naphthene	L. P. Calkin.
313	20.8	.861	32.8	11.9	.886-.910	28.2-24.0	9.1	.910-.929	24.0-20.8				53.7	43.3	20.8	9.0	Intermediate	Do.
314	14.0	.847	35.6	11.2	.860-.885	33.0-28.4	6.0	.885-.894	28.4-26.8				71.3	25.7	6.8	1.7	do	M. B. Cooke.
315	15.5	.843	36.4	11.5	.854-.874	34.2-30.4	6.5	.874-.884	30.4-28.6				72.7	24.3	6.1	1.5	do	W. B. Lerch.
316	19.5	.845	36.0	12.0	.857-.886	33.6-28.2	7.9	.886-.888	28.2-27.9				73.4	23.6	4.2	1.0	do	H. M. Smith.
317	21.9	.869	31.3	18.2	.887-.902	28.0-25.4	8.8	.902-.908	25.4-24.3	5.7	.908-.911	24.3-23.8	54.6	42.4	5.1	2.2	Naphthene	M. B. Cooke.
318	21.1	.851	34.8	12.1	.864-.885	32.3-28.4	4.6	.885-.892	28.4-27.1				69.8	27.2	6.2	1.7	Intermediate	I. H. Nelson.
319	14.5	.852	34.6	10.9	.886-.913	28.2-23.5	11.8	.913-.924	23.5-21.6				45.5	51.5	21.2	10.9	do	M. B. Cooke.

TABLE 2.—*Equivalent specific gravities and degrees A. P. I. according to the American Petroleum Institute equation degrees A. P. I.* $=\frac{141.5}{sp.\ gr.}-131.5$

0.650	86.2	0.700	70.6	0.750	57.2	0.800	45.4	0.850	35.0	0.900	25.7	0.950	17.5
1	85.9	1	70.4	1	56.9	1	45.2	1	34.8	1	25.6	1	17.3
2	85.5	2	70.1	2	56.7	2	44.9	2	34.6	2	25.4	2	17.1
3	85.2	3	69.8	3	56.4	3	44.7	3	34.4	3	25.2	3	17.0
4	84.9	4	69.5	4	56.2	4	44.5	4	34.2	4	25.0	4	16.8
5	84.5	5	69.2	5	55.9	5	44.3	5	34.0	5	24.9	5	16.7
6	84.2	6	68.9	6	55.7	6	44.1	6	33.8	6	24.7	6	16.5
7	83.9	7	68.6	7	55.4	7	43.8	7	33.6	7	24.5	7	16.4
8	83.6	8	68.4	8	55.2	8	43.6	8	33.4	8	24.3	8	16.2
9	83.2	9	68.1	9	54.9	9	43.4	9	33.2	9	24.2	9	16.0
.660	82.9	.710	67.8	.760	54.7	.810	43.2	.860	33.0	.910	24.0	.960	15.9
1	82.6	1	67.5	1	54.4	1	43.0	1	32.8	1	23.8	1	15.7
2	82.2	2	67.2	2	54.2	2	42.8	2	32.7	2	23.7	2	15.6
3	81.9	3	67.0	3	54.0	3	42.6	3	32.5	3	23.5	3	15.4
4	81.6	4	66.7	4	53.7	4	42.3	4	32.3	4	23.3	4	15.3
5	81.3	5	66.4	5	53.5	5	42.1	5	32.1	5	23.1	5	15.1
6	81.0	6	66.1	6	53.2	6	41.9	6	31.9	6	23.0	6	15.0
7	80.6	7	65.9	7	53.0	7	41.7	7	31.7	7	22.8	7	14.8
8	80.3	8	65.6	8	52.7	8	41.5	8	31.5	8	22.6	8	14.7
9	80.0	9	65.3	9	52.5	9	41.3	9	31.3	9	22.5	9	14.5
.670	79.7	.720	65.0	.770	52.3	.820	41.1	.870	31.1	.920	22.3	.970	14.4
1	79.4	1	64.8	1	52.0	1	40.9	1	31.0	1	22.1	1	14.2
2	79.1	2	64.5	2	51.8	2	40.6	2	30.8	2	22.0	2	14.1
3	78.8	3	64.2	3	51.6	3	40.4	3	30.6	3	21.8	3	13.9
4	78.4	4	63.9	4	51.3	4	40.2	4	30.4	4	21.6	4	13.8
5	78.1	5	63.7	5	51.1	5	40.0	5	30.2	5	21.5	5	13.6
6	77.8	6	63.4	6	50.9	6	39.8	6	30.0	6	21.3	6	13.5
7	77.5	7	63.1	7	50.6	7	39.6	7	29.9	7	21.1	7	13.3
8	77.2	8	62.9	8	50.4	8	39.4	8	29.7	8	21.0	8	13.2
9	76.9	9	62.6	9	50.1	9	39.2	9	29.5	9	20.8	9	13.0
.680	76.6	.730	62.3	.780	49.9	.830	39.0	.880	29.3	.930	20.7	.980	12.9
1	76.3	1	62.1	1	49.7	1	38.8	1	29.1	1	20.5	1	12.7
2	76.0	2	61.8	2	49.5	2	38.6	2	28.9	2	20.3	2	12.6
3	75.7	3	61.5	3	49.2	3	38.4	3	28.8	3	20.2	3	12.5
4	75.4	4	61.3	4	49.0	4	38.2	4	28.6	4	20.0	4	12.3
5	75.1	5	61.0	5	48.8	5	38.0	5	28.4	5	19.8	5	12.2
6	74.8	6	60.8	6	48.5	6	37.8	6	28.2	6	19.7	6	12.0
7	74.5	7	60.5	7	48.3	7	37.6	7	28.0	7	19.5	7	11.9
8	74.2	8	60.2	8	48.1	8	37.4	8	27.9	8	19.4	8	11.7
9	73.9	9	60.0	9	47.8	9	37.2	9	27.7	9	19.2	9	11.6
.690	73.6	.740	59.7	.790	47.6	.840	37.0	.890	27.5	.940	19.0	.990	11.4
1	73.3	1	59.5	1	47.4	1	36.8	1	27.3	1	18.9	1	11.3
2	73.0	2	59.2	2	47.2	2	36.6	2	27.1	2	18.7	2	11.1
3	72.7	3	58.9	3	46.9	3	36.4	3	27.0	3	18.6	3	11.0
4	72.4	4	58.7	4	46.7	4	36.2	4	26.8	4	18.4	4	10.9
5	72.1	5	58.4	5	46.5	5	36.0	5	26.6	5	18.2	5	10.7
6	71.8	6	58.2	6	46.3	6	35.8	6	26.4	6	18.1	6	10.6
7	71.5	7	57.9	7	46.0	7	35.6	7	26.3	7	17.9	7	10.4
8	71.2	8	57.7	8	45.8	8	35.4	8	26.1	8	17.8	8	10.3
.699	70.9	.749	57.4	.799	45.6	.849	35.2	.899	25.9	.949	17.6	.999	10.1
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